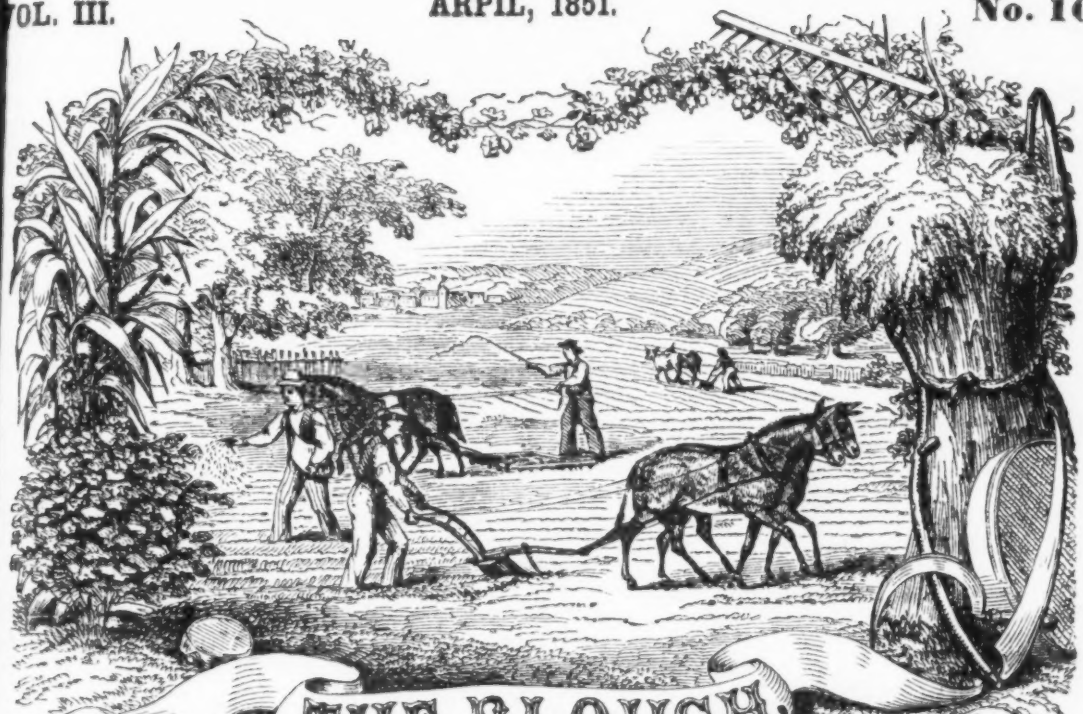
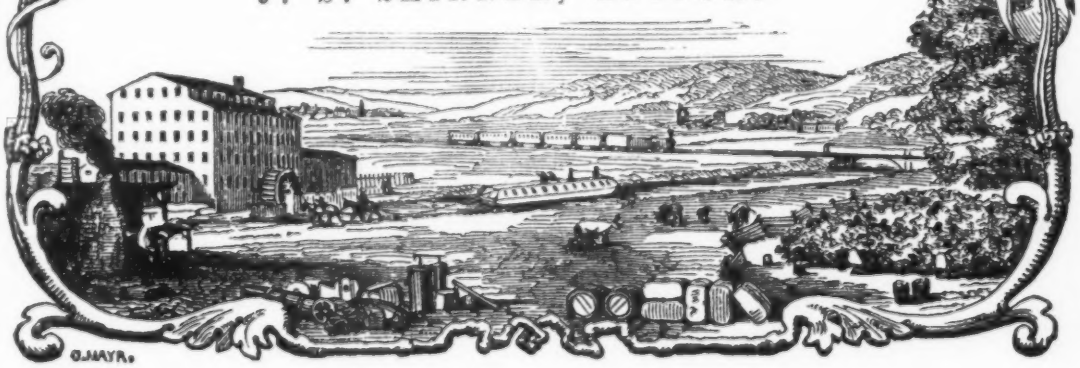
VOL. III. APRIL, 1851. No. 10.



THE PLOUGH,

THE LOOM AND THE ANVIL

J. S. SKINNER, EDITOR.



PHILADELPHIA:
J. S. SKINNER, 79 Walnut Street.
BOSTON:
M. P. PARISH, 17 and 19 Cornhill.

THE TERMS are in advance—$2 each, where five unite—$5 for two subscribers, or for two years; and $3 for a single one. Sixty-four pages monthly, printed in the best style, and on the best of paper.

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TO CORRESPONDENTS.—The translation on the mode of preserving grain was received too late for this number.

The engravings of Ruggles, Nourse, Mason & Co., illustrating their engravings and the work they do, have been received. They will appear in our next.

☞ Postmasters or others, sending ten dollars, shall have six copies of this work sent for a year to such address as they may give.

ANY of the following agents are authorized to collect money or take subscriptions for the *Plough, the Loom, and the Anvil;* but we wish our subscribers to understand that this is not to prohibit them from remitting their subscriptions by mail to us direct. Indeed, we would much rather they would do so, thereby saving us heavy commissions; and we will take the risk of its coming safe:—

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The Plough, the Loom, and the Anvil.

VOL. III. APRIL, 1851. No. X.

THE PROSPECT:

AGRICULTURAL, MANUFACTURING, COMMERCIAL, AND FINANCIAL,

AT THE OPENING OF THE YEAR 1851.

BY HENRY C. CAREY.

HAVING closed in the December number Mr. CAREY's essays on the "HARMONY OF INTERESTS, Agricultural, Manufacturing, and Commercial," in which it was made apparent, by facts and arguments past all dispute, how all these interests prosper together under a system of protection, and how as invariably they have declined when that system has been withdrawn,—the January number was opened with "THE PROSPECT, Agricultural, Manufacturing, Commercial, and Financial, at the opening of the year 1851." This lucid exposition of the condition of the country commenced with an earnest but respectful invitation to the Hon. R. J. WALKER, author of the Tariff of 1846, and Head of the Free-trade League, to a fair and full discussion of the two systems,—Mr. Carey, himself an advocate for Free-trade, maintaining that it is only to be reached through a system of perfect protection. For ourselves, our only object being to arrive *at the truth*, we engaged to publish both sides, if the opponents of the doctrine we maintain would so far reciprocate as to do the same in any recognised journal of "The League."

Though this challenge to a fair discussion, in which the whole public is so deeply interested, was copied and spread throughout the Union, to this day Mr. Walker has never taken up the glove. *There it still lies.*

Whatever estimate may be placed upon these papers from Mr. C. by men who have not yet acquired the habit of thinking, or who think that the *Alpha* and *Omega* of government and liberty consist in *party* ascendency, they have not failed to command the notice and admiration of some of the ablest writers on political economy in Europe. Thus, among others to the same effect, the London *Standard* says, "It is one of the ablest documents it has been our fortune to meet with on the question of protection and free-trade. Were the question brought before the British Legislature in the same able manner, in all the practical details, as by Mr. Carey, the author of the publication alluded to, (a letter addressed to the ex-Secretary free-trade Walker, last month,) it would, we humbly conceive, smash our free-traders *in toto*, and convince ignorance the most obstinate, and prejudice the most blind."

But our purpose now is to announce, that the present series of essays, intended to warn the public of the frightful prospect opening upon the country, will be closed in our next number, in which the reader will find the "*Promise*" of 1846 contrasted with the "*Performance*." After that, shorter papers will be given to illustrate the connection between the financial policy of the government and our agricultural and other great industrial interests to be as natural and inseparable as are cause and effect throughout nature. [*Ed. of P. L. & A.*

When production is large and prices are fair, the labourer obtains good wages, and is enabled to supply himself abundantly with food and clothing, and ultimately to become the owner of machinery to be used in aid of his labour, while the farmer finds his land increase in value; and then it is that all grow rich. That such is the case, is proved by the rapid increase in the consumption of cotton and woollen cloths, and of iron, under the tariff of 1842.

When, on the contrary, production is small and prices are temporarily high, the labourer obtains less wages, and finds a diminution in the power to purchase food or clothing, and his power to accumulate is destroyed, while the farmer finds his lands diminishing in value; and thus it is that all grow poor. That such is the case, is proved by the diminution in the consumption of cotton and woollen cloths, of fuel and of iron, under the tariff of 1846.

With a population two-thirds greater than in 1833–4, we export a less

actual quantity of tobacco and rice—little more per head of provisions—and but about sixty per cent. more of cotton, and the quantity falls from day to day. Such is the case with almost every article of domestic production, and of every one we produce far less per head than we did four years since. The new crop of mess pork is now selling in New York at $14, and mess beef at $15, being an advance of from forty to fifty per cent. upon the above prices, a consequence of diminished production. The labourer suffers in the price of his food, and the ship-owner suffers in the diminished demand for ships.

Maine sent to market, in 1842, of LUMBER..... 111,000,000 feet.
The quantity grew gradually until it reached, in 1845,... 171,000,000
And the average of 1845 and 1846 was..... 156,000,000
For a time it continued to grow, but in 1849 it receded to 160,000,000
In the present year the amount shipped has been about ... 180,000,000

We have had a vast increase of population, and yet the increase is trivial.

If the reader desire to understand the cause of this, he will find it in the following statement of the import from Canada:

Lake Champlain received of sawed lumber from the port of St. Johns:

	Board Measure.
In 1847	7,000,000
In 1848	9,000,000
In 1849	12,000,000
In 1850, to Oct. 10	41,785,741

And of square timber:

	Cubic Feet.
In 1847	310,000
In 1848	730,000
In 1849	1,150,000
In 1850, up to Oct. 10	2,660,000

In 1850 the total lumber exports to Lake Champlain up to Oct. 10th, amount to the large sum of 61,705,941 feet broad measure.—*Burlington Courier.*

The closing of the mines and furnaces and factories has diminished the market for lumber, and Maine is now being depopulated by the emigration of her men to Minnesota, there to engage in the preparation of new machines *for future production*, while, in the mean time, we have to bring the food of Canada to feed the men engaged in making roads by which they may come to market, and the lumber of Canada to make the sills for those roads, and build the houses of the workmen employed in laying them.

In 1846 the quantity of SALT reaching tide water, Buffalo, and Oswego, amounted to..... 2,788,489 bushels.
By 1849 it had reached..... 3,661,926

In 1850 there has been a diminution of production to the extent, as is stated, of a million of bushels, bringing the quantity down to, or probably below, the point at which it stood in 1846.

Every thing with which to pay for cloth or iron, is scarce, and hence the "glut" of cloth and iron. The productive power of the nation diminishes daily, and we are held to be highly "prosperous" because prices rise, *and the less the power to produce commodities to be transported, the greater is the excitement in relation to constructing new roads by which this diminished product may be carried to market, and new lines of steamers by which the short and steadily diminishing crops of food, cotton, and tobacco may reach the great market of Europe.* The more roads we build, the fewer commodities we produce; and the smaller our power of consumption, and our power to maintain trade, the greater is held to be the necessity for new machinery of trade. The road by Tehuantepec, as we are told, grows in favour from day to day. Again, we learn that the Nicaragua Canal is the favourite; while, at the next instant, we have the claims of Mr. Whitney's great road pressed upon us for consideration. Mobile must have its road to the Lakes, one sec-

tion of which is to be six hundred and fifty miles in length.* Charleston seeks a road to Memphis, and St. Louis is determined on one to the *Rio Grande.*

Canada knocks at our door for permission to introduce her food and her wool duty free, that she may be enabled to go abroad to purchase cloth to clothe the men who grade her roads, and iron with which to lay them. Emigration to that country diminishes daily. It is less this year, by twenty per cent., than it was the last. Her lands are diminishing in value, for she has no domestic market, and she finds herself compelled to look to us for an outlet for her products. She sees that the greatest market of the world for food, is ours; and yet, but recently, we were told that we had four hundred millions of bushels for which we needed a market! Canada pays twenty per cent. duty, and competes with our farmers now. Admit her products duty free, and she will then speedily double and treble her quantity,† for her land will then acquire value as ours loses it, and we shall then be contributing largely towards the making of her roads. That will be one more and a great step on the road to ruin we are now so rapidly travelling.‡ We shall then have a system of *machine-making* such as the world never before witnessed. With Canada and her

---

* Some of the leading railroad men and capitalists of this city, in connexion with others of Boston and Philadelphia, will apply to the Legislature of the State of Illinois, at its next session in January, for a charter, under the name of the "Great North Western Railroad Company," for the purpose of constructing the proposed Railroad from Cairo, at the mouth of the Ohio river, to the southern terminus of the Illinois and Michigan Canal, with branches extending to Galena and Dubuque, and to Chicago, embracing in all upwards of six hundred and fifty miles in length. In aid of this road it will be recollected that Congress, at its last session, granted some two and a half millions acres of land lying on its route. The provisions of the proposed charter are stated to be very favourable for the State, while, at the same time, it offers inducements which insure the requisite amount of capital to complete the road in the shortest possible time, and without the necessity of disposing of an acre of the donated land, until after the road is open for use its whole length.—*Public Ledger.*

† The quantity of wheat for which Canada needs a market this year, is estimated at *eleven millions of bushels.*

‡ "*Spite the twenty per cent. duty, it is highly probable that, owing to the completion of the Ogdensburg and Lake Champlain Railroad, an increasing quantity of Canadian produce will be consumed in the manufacturing towns of the New England States.* It invariably happens that the stocks of breadstuffs in the importing States are pretty thoroughly exhausted prior to the opening of the navigation each year. At such times Canadian flour will be more readily accessible by the Ogdensburg railroad than the produce of the West. *The reciprocity question acquires additional importance from these circumstances, pointing, as they do, to the probability that the New England States will become our best market, the consumers of the bulk of our surplus produce.* The causes that have hitherto retarded the transport of western produce to the seaboard during the winter, will be partially overcome by the completion of the Erie railroad, west of Buffalo, on the south side of Lake Erie. With the completion of that section, a line of railroad will extend from the wheat giving States of the West to New York. When brought to the latter place, the produce will still have to be conveyed to the Eastern States for consumption. *The proximity of the wheat-giving districts of Canada to the Eastern States will enable us to supply their market more readily than it will be in the power of Western growers to do.* The United States, considered as a unit, are exporters of agricultural produce. The Union is, however, divided, commercially, into two sections—the agricultural, grain-exporting States of the West, and the manufacturing, grain-importing New England States. Canada is a competitor, but not on equal terms, for supplying the wants of the importing States.

"*The difficulty is to overstride the barrier of twenty per cent. duty.* Whether this be overcome or not, to any great extent, Boston will probably become the shipping port for most of our produce. The reciprocity question has acquired a ten-fold importance from the facilities which the Ogdensburg railroad offers for conveying our produce to the markets of New England. Congress has adjourned, leaving the question where it has been for years. *We must wait patiently to* SEE WHAT THE NEXT SESSION WILL BRING FORTH."—*Canada Paper.*

roads on the north, Nova Scotia and her roads on the north-east, Nicaragua and Mexico on the south, California, Utah, and New Mexico and their roads on the south-west, and the almost innumerable roads, rivers, and harbours of the centre, with a *daily diminishing power to produce* the lumber with which to build their houses and lay the roads—the food with which to feed the men who make the roads and clear the farms—or the cloth with which to clothe them—and a daily increasing necessity for purchasing food, clothing, lumber, and iron, with corresponding dimunition in the power to pay for them, we shall then be more fairly started in the career which leads to ruin than we were in 1836, and probably about equally so with England in 1846.*

Diminished demand for labour has greatly diminished wages. Of the tens of thousands who have been dismissed from the now abandoned mines, and furnaces, and mills, a large portion now earn nothing whatever with which even to purchase food, and yet provisions have risen in price because of diminished production, and cotton and tobacco have risen in price from the self-same and only cause, for *the power of purchase* diminishes from day to day. The necessary consequence of the diminished reward of labour is, that immigration has become stationary, and must diminish as the necessaries of life rise in price with the increase of *machine-making* and diminution of production. From 1843 to 1847 it grew steadily, commencing with 75,000 and ending with 239,742. Since then, the following has been the movement:

1848	229,492
1849	299,610
1850	269,718

Every arrival brings with it the advice that "passengers are comparatively scarce and considerably lower," and thus, as our power to produce commodities for export diminishes, there is a diminution, and that necessarily, of the inducement to foreigners to come and live among us, and make a market for our products.

In the four years of the tariff of 1846, immigration trebled, and we not only fed and clothed this large increase, but our power to supply food and cotton to the world increased with unexampled rapidity, and the power of the labourer, the mechanic, the farmer, and the planter, to command cloth and iron increased with such rapidity that the consumption of cotton, per head, doubled, and that of iron trebled, in that brief period.

From that time to the present, the power to obtain food, and cloth, and iron, in return for labour, has greatly diminished, as is obvious from the fact that the price of food has greatly risen, because of diminished production, and the consumption of cotton, of wool, and of iron, has *actually diminished in quantity*, nothwithstanding the vast increase of population. Immigration has become stationary, not because of a diminished desire to fly from Europe, but because the demand for labour has diminished, as mines and furnaces and mills have been closed, and as capital has ceased to be in demand for the opening of new mines and the building of new furnaces and mills. The tariff of 1846 was to diminish taxation and raise the price of labour. Had it done so, the ratio of the growth of immigration would have

* As this page is going to the printer, I meet with the following passage, to which I beg to call the attention of the reader:—

"The beginning of the year 1836 was characterized by every symptom of *prosperity*, and its usual accompaniments, great speculation!"—*History of English Panics, in Merchant's Magazine.*

Had any one in 1836, or in 1846, predicted the ruin that was to come on England, he would have been laughed at, as I may be by many of my readers. To such, I have only to say that, if they will re-read these pages a few years hence, they will understand them better.

increased from year to year. From 1844 to 1845, the growth was about *thirty-five* per cent. In the next year it was *forty-five*, and in the following one it was *seventy*. Why has not this ratio been maintained? Why has it not even *increased*. The answer may be found in the fact that the productiveness of labour has diminished, and that it is in a steady course of diminution. To those who would desire to seek in any other cause a reason for the change, I have to say that the reasons for *emigration* from Europe have greatly increased within the last three years,* and that, if we had not destroyed among ourselves the reasons for *immigration*, the number of persons arriving here this year would be little short of a million, making a market for a greater quantity of agricultural produce than we shall this year export to all the world.

The power to import commodities from abroad depends upon the power to produce commodities to give in exchange for them, or upon *the credit* of the nation that desires to obtain them without immediate payment. Under the tariff of 1828, our power to purchase, *and pay*, grew with great rapidity, and we made great credit abroad. Under the compromise act our power to pay diminished with great rapidity, and we used our credit until we became bankrupt. Under the tariff of 1842, our power to purchase, *and pay*, increased with immense rapidity, because our productive power increased. We then redeemed our credit, for we not only paid up all the back interest, but paid off much of the debt that had accumulated. Our power of production is now diminishing rapidly, and we are now again using our credit, as we did in 1836, and speedily to arrive at the same result. In the last three years the foreign debt of the country has grown from about *two hundred* to nearly *three hundred* millions of dollars, and the annual interest from *twelve* to nearly *eighteen* millions of dollars, requiring for its payment, probably, almost all the food we shall export this year.

The following table will enable the reader to compare *the growth* of our power to consume foreign products under the tariff of 1842, when we not only *paid for all we imported*, but paid off many millions of back interest, and of debt, with the growth of that power under the tariff of 1846, when we go in debt, at a rate increasing with every hour, until it has at length reached the appalling amount of almost a million of dollars per week.

	Salt. Bushels.	Sugar. Pounds.	Coffee. Pounds.	Tea. Pounds.	Pig Copper. Value.	Coal. Tons.
1841–2 1842–3 average,	5,800,000	115,000,000	107,000,000	13,000,000	$595,000	98,000
1845–6 1846–7 average,	8,100,000	166,000,000	138,000,000	15,500,000	1,375,000	152,000
1847–8	8,969,000	244,000,000	145,000,000	21,000,000	702,000	196,000
1848–9	11,622,000	242,000,000	151,000,000	13,000,000	988,000	200,000
1849–50	11,224,185	204,000,000	130,000,000	25,000,000†	1,167,000	180,000

* The following is a specimen of the course of things in Ireland:—

"Evictions.—During the last two years and a half, the houses of 1951 families have been levelled in Kilrush, Ireland, and 408 other families have been unhoused."

In Germany and in England the reasons for emigration increase hourly, and yet, as we are here told, large numbers of emigrants are returning to Ireland because of inability to get employment.

"Emigration Turning Back.—The *Kilkenny* (Ireland) *Moderator*, of October 2d, states that a considerable number of persons, who recently emigrated to America, returned home last week, being disappointed in their expectations of earning a livelihood in the New World."

† The *value* of Teas imported in 1845 and 1846, was.....$10,752,000
whereas, that of the importations of the two last years has been only.... 8,659,000

	Iron. Tons.	Cottons. Value.	Woollens. Value.	Flaxen Goods. Value.	Silks and other French Merchandise.
1841–2 1842–3 average,	81,050	$7,184,000	$6,300,000	$2,900,000	$14,500,000
1845–6 1846–7 average,	89,300	14,780,000	10,300,000	5,063,000	23,250,000
1847–8	175,000	18,412,000	15,230,000	6,600,000	28,000,000
1848–9	312,000	15,180,000	13,704,000	5,700,000	23,233,000
1849–50	352,000	19,895,000	15,965,000	8,095,000	27,000,000

We have thus, for the last year, a little more salt, sugar, and coal, and some tea to take the place of the coffee that is short—a small increase of silks and other French merchandise, and about one-tenth as much additional cottons, woollens, and flaxen goods, as could be spun and woven by the operatives who are now unemployed, and one-half as much additional iron as could be made in the now abandoned furnaces by the now unemployed workmen—and withal, *we have gone fifty millions in debt.*

It is impossible to examine this table without being struck with the utter insignificance of any *possible* augmentation of the foreign trade, compared with that which, under a system which looks to the establishment of free-trade by means of breaking down the British monopoly of machinery, takes place in the domestic market. Under the tariff of 1842, the production of iron grew from 200,000 to 800,000 tons, with a demand increasing more rapidly from year to year. We have now reduced the domestic production to less than 500,000 tons, and our increased import amounts to 270,000 tons, *and unpaid for.* Under the tariff of 1842, the domestic consumption of cotton grew from 267,000 bales to 600,000. Under that of 1846, we have reduced it so far that that of the present crop cannot exceed, and may not equal 500,000, and our increased net import, that is to say, the excess of import, deducting the excess of export, does not exceed *ten thousand* bales—and for this we have not paid. Under the tariff of 1842, the import of cottons doubled, while with a greater increase of population, and all the vast increase of debt, it has exceeded that of 1846 by less than fifty per cent. Under the tariff of 1842, the domestic consumption of wool doubled, while under that of 1846 it has largely diminished, and yet the import of woollens, which increased sixty per cent. under the former, has grown only fifty per cent. under the latter, and for that we have yet to pay. Under the tariff of 1842, the import of flaxen goods almost doubled. Under that of 1846, it has grown only sixty per cent. That of pig-copper more than doubled under the one, while it has largely diminished under the other. Silks and wines grew more than fifty per cent. under the one, and were paid for. Under the other they have grown fifteen per cent., and are not paid for. Coal grew under the one from one million to three, and imports grew more than fifty per cent. Under the other, production has remained stationary, while imports have grown but 28,000 tons. The power of consumption diminishes with the diminution of the power of production.

The great object of what is called "free-trade," is to increase our trade with Europe, by sending there our raw materials, instead of working them up at home, to be sent, in the forms fitting them for use, to the producers of tea, coffee, salt, copper, and other raw products, and yet it is impossible not to be struck with the utter insignificance of the commodities received in exchange The whole energies of the country are directed to this foreign trade. A large portion of its territory and of its population is employed in producing cotton, rice, tobacco, flour, pork, cheese, &c. &c. for Europe, and for the maintenance of this trade we build immense cities, and fleets of ships and steamers, and

support expensive embassies, with most of which we could better dispense, and what does it amount to? All the iron we receive from them does not amount to fifty cents per head. All the wool scarcely exceeds half a pound per head. The flaxen goods would scarcely give to each person a shirt, and the silks would do little more than give to each a handkerchief. Of all the cotton we send abroad the quantity returned is trivial. Of the products of the earth we receive from Europe scarcely any thing, and what we do receive from thence consists mainly of *the services* of men, women and children employed in spinning and weaving cotton, wool, flax, and silk, under hard task-masters—*middlemen*, who live at the cost of the producer and consumer—and thus it is that we contribute to the maintenance of a system that is destroying the people of Great Britain and those of all her colonies. It may safely be asserted that there exists no record of any independent nation submitting to be compelled to aid in maintaining a system at once so ruinous to themselves, and so immoral, for we are fairly chargeable with furnishing the means by aid of which that country is enabled to tyrannize over Ireland, India, China, and the other nations of the earth. Without our aid she would be powerless for the maintenance of a system that can be designated by no other term than that of "satanic," and yet it is in the name of "democracy" that we are invited to aid in the continuance of a course of oppression unequalled now, or at any other period of the world.

It is clear that we produce less to send abroad. We have less cotton for export, because we produce much less in quantity than we did four years since. We have less tobacco to export, and less rice, and the prospect is, that when we shall have gotten fairly started in our career of road-making we shall have no food whatever to spare, but, on the contrary, shall have to increase our imports from Canada. Our export trade diminishes and freights are low.

Our import of men is now diminishing, and each successive arrival brings intelligence of the increased difficulty of filling ships, at lower rates, and this difficulty must continue to increase, as the price of food shall rise with diminished production, attended, of course, as it has been and must continue to be, with an actual diminution of money wages. We obtain less oil. We have less freight outward, and less freight inward, and the earnings of our shipping employed in the foreign trade have largely diminished,* the necessary consequence of which is a diminution of ship building.

In the year ending June, 1843, we built	64,000 tons.
In that ending June, 1847, it reached	243,000
In the year 1847–8, it was	318,000
For 1849–50 it has fallen to	272,000

We see here the quantity trebling under a system that was to destroy foreign commerce, and stationary under one that was intended to foster it at the expense of domestic production, upon which commerce must be built. How far this is the case, will be seen from the following most instructive facts in relation to the building of vessels for the canal and coasting trades:

	Brigs.	Schooners.	Canal Boats.	Steamers.
Built in 1842–3	34	118	173	79
1845–6	164	576	355	225
1849–50	117	547	290	159

* A barrel of flour is carried to Liverpool for a shilling, 24 cents, and three pounds of cotton go for a cent. An eminent merchant recently told me that he would not *accept* a packet-ship on condition of running her in the New Orleans or Liverpool trade. The ships now being built are remarkable for speed, and they make good freights, while the common run of ships are far more likely to ruin their owners than to enrich them.

With a vast increase of population the internal trade diminishes under a system that looks to building up a large foreign commerce upon the ruins of a domestic one. The system of 1846 looks to the erection of *an inverted pyramid.* That of 1842 looked to the erection of *a true pyramid,* giving us a large external commerce based upon an immense internal one.

There has been an increase in the number of ships, while the canal boats and steamers, which bring food for foreign trade, have diminished. That, however, is not all. The quantity of shipping absorbed by the gold discovery in California, unthought of at the time that the tariff of 1846 was passed, is greater than the whole amount built in the last two years, so that, notwithstanding our vast increase of population, *the quantity employed in our foreign trade is greatly less than it was in* 1846. The total tonnage, domestic and foreign, cleared in the last year, excluding California, shows a diminution, as compared with the previous one, of no less than 248,000 tons, with a diminution of crews to the extent of 9183 men and boys; and, while the American tonnage has largely decreased, the foreign has largely increased. Nevertheless, at this moment, when we have less to export, and fewer men to import, Congress is besieged by applicants for aid to new lines of steamships for every part of Europe and Asia, and immense ships are to be built for carrying negroes to Africa and bringing men from Ireland and Germany, when, from the diminished production of food and clothing, all the inducements for coming to this country are rapidly passing away. It is a delusion never exceeded, except perhaps in England in 1846, and the results here must be the same as those which have been witnessed there—utter ruin. Nevertheless, every new steam-ship and every new road, either made or projected, is chronicled, and will continue to be chronicled, as an evidence of "prosperity," although the quantity of things to be carried in ships, and on roads, is rapidly diminishing, and will continue to diminish as we abandon old machines, now productive, to create new ones for future production.

It has been seen that under the existing commercial system,—which not only prevents any increase in the amount of population employed in the work of producing coal, iron, or cloth, but is rapidly closing all the mines, and mills, and furnaces of the country, and driving population to the West, there to enter into competition with the farmers and planters of the older States,—the quantity of commodities arriving at New Orleans, or passing on the New York canals, is rapidly decreasing. The necessary consequence of this, is a diminution in the demand for steamboats, and thus is the demand for labour diminishing in every department of employment, except in that of creating new farms to become at some future time productive of commodities, and new roads on which to carry those products, when there shall be any to send. The building of steamboats at Cincinnati, in 1845–6, amounted to.. 5,657 tons.

In the following year it reached..... 8,268
And in 1847–8.....10,232
Since then it has rapidly retrograded. In 1847–8 it was... 7,281
And in 1849–50 only..... 4,561

being lower than it was five years since, under a system that was then denounced as anti-commercial.

Of one thing, and one alone, we produce more than we did in 1846, and that is GOLD. Of that we obtain, and may for some years continue to obtain as much as would purchase the coal and iron that could be obtained from our now abandoned mines, and furnaces, and rolling mills—but where else we are to look for compensation for our diminished production of cotton and of wool, of cotton and woollen cloth, of tobacco and of rice, and for an export of food diminished below the point at which it stood on the day on which was passed the tariff of 1846, notwithstanding an augmentation of agricultural

population amounting to almost, if not quite, four millions, I am unable to see. It is not in our foreign trade, for we have less to sell. It is not in our shipping, for we have less to transport. It is not in our roads, for their actual value, free from foreign debt, is little more than it was four years since. So far as it may be derived from an addition of almost a hundred millions to our foreign debt, and almost six millions to the yearly demand for interest, we have them, and to them alone must we look for compensation for the destruction of the happiness and the hopes of almost hundreds of thousands of families, deprived of employment, and almost of bread, by the tariff of 1846.

From 1830 to 1834, the value of imports, paid for by our exports and by the earnings of shipping, increased gradually and steadily, until, from $4.32 per head, it grew to more than $7, making *an increase* of per cent. 60

At the close of the compromise period, with a horizontal tariff of 20 per cent., the country had become so impoverished that, while paying little interest on its debt, the power to import was only $4.48 per head, showing *a decrease* of nearly per cent. 40

From that period to 1847, it rose gradually, until, notwithstanding the heavy demands for back interest, and the redemption of a considerable amount of debt, it reached $7, making, with the interest about $7.60, or *an increase* of per cent. 50

In 1848 the amount paid for was under *six dollars* per head, and in 1849, little over *five dollars* per head.

For the last year, the total imports, including specie, were..	$187,217,754
The foreign exports, including specie, were	14,951,808
	$172,265,946
If we now deduct from this the debt created, because of the diminishing power to send abroad commodities in payment for those we require, say only.....	47,265,946
we have, as the total amount paid for by our exports and our shipping	$125,000,000

The population is estimated at *twenty-four* millions, at which rate the imports would be about $5.12 per head; but taking it at twenty-three millions, it would be about $5.40, being about *twenty-three per cent. less than it was four years since.* It must now be recollected that it is always assumed that protection diminishes the power to consume foreign commodities, and that the object of the change of 1846 was that of increasing the power to consume them. The facts, however, show that the power of consumption grew rapidly under the protective tariff of 1828, diminished under the compromise until it reached its lowest point at the close of the free-trade period, increased rapidly under the tariff of 1842, and is now steadily and rapidly diminishing under that of 1846. Here is a constant fact that *must* be accounted for by those who seek to attain freedom of trade by any other means than those of *adequate and complete protection.*

The reason of this is simple. When men produce largely of food, they can consume largely of cloth. When they produce largely of coal and iron, they can buy largely of coffee, sugar, and silks. Under the protective system the productive power of labour and capital increases, while under that commonly known by the name of "free-trade," it diminishes. Adam Smith taught that the nearer the men who made exchanges, the more they would have to exchange; and the greater the tendency to consume on the land the products of the land, the richer would grow the farmer and his land. His successors of the modern English politico-economical school teach

the reverse, and the result may be seen in the fact of the steadily diminishing productive power of Great Britain and her colonies.

Under the protective tariff of 1828, the REVENUE FROM IMPORTS increased with such rapidity that it was found necessary to *establish free trade* in coffee, tea, and many other commodities. Under the Compromise tariff it rose at first, while we had credit abroad, but afterwards fell so rapidly that the nation was compelled to beg for loans. Under the tariff of 1842 it rose to a higher point than had ever before been reached, and we not only paid for our imports, but paid off a large amount of back debt and interest, besides paying current interest to the extent of almost twelve millions yearly. The net receipts of the current year are estimated at $43,500,000, and if they should amount to that sum, they will involve the creation of a foreign debt of not less than sixty millions of dollars, the duties on which would be at least fifteen millions, thus reducing the real revenue derived from sales of our products and from earnings of our shipping, to about the point at which it stood in 1844–5, six years since, during which the population must have increased nearly one fourth. Excess of revenue, derived from foreign loans, under the compromise, led to almost bankruptcy of the National Treasury, and such must again be the result, so soon as the power to contract further debt shall have ceased.

With the loss of revenue, the necessity for revenue will not diminish. The system of 1846 looks abroad. It seeks the dispersion of our people from Nicaragua to the remotest parts of Canada. It looks to seizing on the commerce of Japan. It needs armies, and fleets, and expensive and useless embassies. It involves us in discussions about foreign territory. It is warlike in all its aspects. That of 1842 looked to home, and was peaceful in its character. The latter looked to cheap government, while the former looks to an imitation of the wasteful and ruinous system of Europe. That such is the fact, may be seen by an examination of the following comparison of the PUBLIC EXPENDITURE under the system which seeks free trade by aid of a protective system that shall destroy the monopoly system of England, and that under a system which looks to driving our whole population into agriculture, that they may be compelled to look abroad for a market for their products, the prices of which are to be fixed in England; and to look abroad for a market in which to buy their iron and cloth, the prices of which are also to be fixed in England, who is thus to be maintained in the enjoyment of her monopoly, by means of which she has already ruined every country dependent upon her.

American Free Trade System.	Per Annum.	*English Monopoly System.*	Per Annum.
1829 to 1834	16,800,000	1834 to 1841	31,700,000
1843 to 1845	20,700,000	1846 to 1849	44,500,000
		1850–51	51,500,000

It would seem to be incumbent upon those who talk of "free trade" and direct taxation, to explain why it is that every effort on our part at imitating the British system of policy, and every effort we make at crushing our producers of coal, cloth and iron, is attended with an increase of expenditure, and increase of government patronage, whereas every effort made towards the annihilation of the British monopoly system and the establishment of an American policy, is attended with a diminution of expenditure and of government patronage.

Prior to the passage of the tariff of 1828, NATIONAL CREDIT had no existence. The nation was weak, and it had no power to enforce observance of its rights. The period from 1830 to 1834 exhibited a remarkable instance of the growth of national wealth, credit, and power. With each step in the

progress of the compromise, all declined, and in its closing years they came near to utter annihilation. With the tariff of 1842, all grew again, and the year 1846 saw the nation arrive at a height of WEALTH, CREDIT, and POWER beyond the anticipations of even the most sanguine men. What will be their condition after the next revulsion, with a debt of four hundred millions, requiring the payment of twenty-four millions for interest, and an expenditure of fifty millions, with a revenue of twenty-five—and what will be the attention then given to their remonstrances against British colonization, time will show.

The American free-trade system looks to the concentration of man, and the increase of the power of men to associate for the improvement of their common condition, whether physical, moral, intellectual, or political. It looks to the maintenance of peace, and the establishment of freedom throughout the world.

The British monopoly system looks to the dispersion of man, and the diminution of the power of men to associate for any purpose connected with the improvement of their condition. It looks to cheap labour and the degradation of the labourer. It looks to the monopoly of land, the destruction of cottages, the expulsion of their inmates, and the establishment of a daily increasing "competition" for poor food, worse clothing, and still worse shelter. It looks to the conversion of the free occupant of land into the slave of the middleman who owns the cotton or the woollen mills. It has ruined and enslaved the people of Ireland and India, and will do the same by us whenever we shall determine to abandon the doctrines of Adam Smith, and adopt those of the modern "free-trade" school of England. It looks to universal war, and the destruction of freedom throughout the world. The first is the system of 1842. The latter is that of 1846, and it is for the people to choose between them.

I would now beg the reader to turn to the first page of this chapter, and see what were the objections to the tariff of 1842, that were to be remedied by that of 1846. It was asserted that the former diverted labour and capital from profitable to unprofitable employments, and that, under the latter, labour and capital would become more productive, yet we find them *everywhere* less productive than they were four years since. It was asserted that the former imposed heavy taxes upon *the many* for the benefit of *the few*, and that the effect was that of diminishing the power to consume cloth, iron, and fuel, yet the consumption is less than it was four years since. With twenty-four millions of people, we produce less than were then produced by twenty-one —we consume less—and we trade far less; except so far as we are enabled to trade on the credit that was created by the operation of the tariff of 1842. Which is really the free-trade system, the advocates of the tariff of 1846 may now determine. I have always been disposed to believe that one great object of freedom of trade was that of increasing trade, but the modern system of "free trade" looks undoubtedly to its diminution.

If we now compare these facts with those of 1836, we shall find a degree of resemblance so great as to be almost, if not quite, startling.

There was then no demand for capital for the building of cotton or woollen mills, or furnaces, or for the opening of coal or ore mines, and the consequence was that the rate of profit was very low, while the price of dividend paying stocks was very high, indicating a diminished return to capital. *So is it now.*

There was then a rush to create stocks of all kinds, by aid of which to secure the use of this unemployed capital for the making of roads. *So is it now.*

There was then a rush of emigration from the old States to the new, the old farms and plantations being abandoned, that labour might be employed creating new ones. *So is it now.*

There was then a growing feeling of the *necessity* for roads, and an equally growing feeling of the absence of *power* to make them without governmental aid. *So is it now.*

There was then a growing disposition to grant such aid for the purpose. *So is it now.*

There was then a growing tendency to the transfer of labour from production to machine-making. *So is it now.*

There was then a steady diminution in the amount of production. *So is it now.*

There was then a steady rise in the price of the first necessaries of life, consequent upon diminished production. *So is it now.*

There was then a stoppage of the growth of immigration, because of the diminished reward of labour. *So is it now.*

There was then a diminished consumption of food, and cloth, and iron. *So is it now.*

There was then a diminished power of exporting commodities with which to pay for cloth and iron. *So is it now.*

There was then a daily increasing necessity for purchasing merchandise on credit. *So is it now.*

There was then a steadily diminishing demand for shipping, with steady diminution in the return to capital so employed. *So is it now.*

There was then a daily *increase* in the amount of interest to be paid abroad, with daily *decrease* in the quantity of commodities with which to pay it. *So is it now.*

There was then a daily increase in the receipts into the Treasury, consequent upon the growth of speculation, requiring iron to be imported for the use of roads. *So is it now.*

There was then a daily increase in the demands upon the Treasury in aid of roads and other improvements. *So is it now.*

We were then, according to the newspapers, highly "prosperous," and the more our production diminished, the higher were prices, and the more "prosperous" we became. *So is it now.*

What was the result of that "prosperity" we know full well. What will be the result of the present "prosperity" we all shall know. The only difference between the two periods consists in this: in the former one our schemes were moderate, being limited within the Mississippi, while in the present period they embrace the whole northern portion of the continent, from the Isthmus of Panama to and including both the Canadas, and from the Atlantic coast to that of the Pacific, and from a great steam communication with India and China on one side, to an equally great one with Africa and Europe on the other.

It would seem to be incumbent on those who advocate the present system as being the one by which we shall reach "free trade," to explain why it was that the compromise, after having reduced the nation to a state of ruin, terminated in the tariff of 1842. Instead, however, of undertaking to explain troublesome facts, they repeat the words "free trade, free trade," and nothing else. We are all free traders, and for myself I can say that I have such an admiration of perfect freedom of trade that the sacrifice should be considerable that would prevent my advocating any measure tending to produce it I cannot, however, close my eyes to the fact that freedom, whether of man or of trade, has everywhere been the accompaniment of growing wealth, as a tendency adverse to freedom has everywhere been the accompaniment of

diminishing production and diminishing wealth, nor can I refrain from asserting *that in the direction of the tariff of* 1846, *freedom of trade can never be reached.* If it can, let the "free-trade" journals for once undertake the discussion of the matter, and explain how the facts and the theory can be made to agree. This would seem to be a far more creditable, as well as honest course, than that of shouting "free trade," and denouncing as "obsolete," opinions entertained at this moment by a large majority of the free population of the Union, but which they are prevented from carrying into practice by the fact that the *constitution, by virtue of federal numbers, secures to the minority the right of making laws for the majority.** In this fact may be found the cause of the existence of free-soilism. To this fact will be due the dissolution of the Union, should such an event unhappily occur. Is it not then desirable that we should *inquire* and endeavour to find the real truth? Is it not assuming a great "responsibility" to advocate any system of measures when it is even possible that they may have such an unhappy effect? Is such a course becoming of statesmen, or of those who undertake to be the teachers of statesmen? I certainly think not.

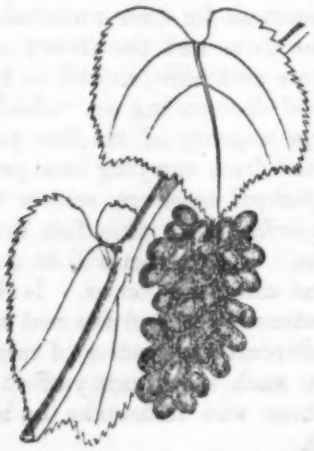
ON THE CULTIVATION OF THE VINE.

If any exhibition of supineness, on the part of land-holders and of persons holding the smallest tenements in the country, could surprise us, it would be the almost universal neglect to provide even their own tables with a fruit, than which none is more delicious, more wholesome, or of easier cultivation. We say nothing here of the millions expended for imported wines, which we ought, and which our friends in Cincinnati will show at the great Exhibition in London we can, manufacture, because—it seems to be the fixed policy of government, that we shall not avail ourselves of our own materials beyond the production and use of them in the rawest and rudest state in which we can raise or dig them from the ground; yet one would hope that now, since we have overrun and conquered large provinces of Mexico, where the climate is peculiarly adapted and the people habituated to the rearing of the vine and the manufacture of wine as a business, we would accompany the mace of authority with the mantle of protection in their accustomed industry. Oh! that since might is everywhere right—might could also be everywhere enlightened!

Varieties.—Several attempts have been made to classify the varieties of this species, but not with much success. In most cases, the form and colour of the fruit alone have been considered, and in others the shape and clothing of the leaves; but, as it will be impossible for us to enter into all of these considerations, we shall only treat of a few of

* The entire exclusion of any views but their own in relation to this important subject is most remarkable, and affords strong reason for doubting if the editors of those journals themselves are fully satisfied that their theory would bear examination. The readers of the *Union*, the *Journal of Commerce*, the *Evening Post*, or the *Public Ledger*, would only be made stronger in their anti-protective faith by a bad argument in favor of protection, and yet the editors of those journals never willingly permit the insertion of a line on that side of the question. They seem to forget that "free trade" in ideas is quite as important as "free trade" in cloth and iron. In this respect the editors who advocate protection prove themselves better "free traders" than their opponents, for I know of no one of them that would not *accept* the offer of printing both sides of the argument, on the single condition that his opponent should do the same, and I know of no "free-trader" that would not be likely to *refuse* it.

those that have successfully been brought under cultivation, which are as follows:



1. V. L. ISABELLA, Prince. *Isabella Grape-vine.*—This variety is distinguished by its large, dark-purple fruit, of an oval form, and of a juicy, musky flavor. It possesses great vigor of growth, is a healthy and abundant bearer of fruit, and what renders it exceedingly valuable in our climate is, that it requires but little protection during winter.—Concerning its origin and history, we are indebted to General Joseph Swift, of Geneva, New-York, for the following account, which we trust will be no less acceptable in coming from so respectable a source, than in the interest elicited in so valuable a production. It appears that Gen. Smith, of Smithville, North Carolina, in 1803, procured from Dorchester, South Carolina, several roots and cuttings of a hybrid vine, which, it is said, had been originated there by some families of Huguenots, between the Burgundy grape of Europe, and the native Fox grape of that vicinity. In the year 1817, a vine produced from these cuttings was transplanted from Smithville, by Mrs. Isabella Gibbs, in honor of whom this variety was named, to the garden then owned by her husband, Col. George Gibbs, which was situated along the southerly side of Cranberry, between Willow and Columbia streets, in Brooklyn, New-York. In 1819, the garden was purchased by Gen. Swift, who very generously distributed roots and cuttings of this vine among his neighbors and others—more especially to the late Wm. Prince, of Flushing, Long Island; through whose efforts it became widely disseminated throughout the Union, and was sent to several countries in Europe, Madeira, &c. The garden has since been divided into lots, and occupied by buildings; and the original Isabella vine, after attaining a circumference of more than a foot, was severed to the ground in 1833. Fortunately, however, several vigorous vines have since sprung up from the roots, which continue to bear fruit in abundance. From other statements, it would seem that this variety is not a hybrid, but was known in this country prior to 1800.

2. V. L. BACOIS ALBIS, Loudon. *Bland's Pale-red Grape, Bland's Fox Grape, Bland's Virginia Grape, Red Scuppernong Grape, Carolina Grape, Mazzei Grape.*—This variety may be known by its pale-green leaves, lengthened clusters, with large berries, of a roundish or oblate form, pale-red color, and sweet, juicy pulp, of a pleasant flavor; in some cases, however, at full maturity, the fruit is said to acquire a dark-purple or red-wine color. It is more esteemed by some, as a table fruit, than that of the Isabella, having a thinner skin, and containing a pulp of less consistency. It was deemed for some time as unsuitable for our northern climate; but it has been found to succeed in maturing its fruit in most seasons, in the neighborhood of New-York, and may successfully be cultivated as a wall fruit in a much higher latitude, both in Europe and America. It has been contended that this variety was brought from Italy by Mazzei; but it is well known that it was cultivated by Col. Bland, of Virginia, long before that gentleman visited this country. The original vine is said to have been found on the Eastern Shore of Maryland, by Mr. Bland, who presented cuttings of it to the late Wm. Bartram and Samuel Powel, of Philadelphia, and some of the persons who received slips of it from the latter gentleman gave it the cognomen of *Powel Grape.*

3. V. L. CATAWBIENSIS. *Catawba Grape-vine.*—The fruit of this variety occurs in loose bunches, of an inconsiderable size, and of a beautiful appearance. The berries are large, and much varied in their flavor and color, according to their exposure to the rays of the sun. Those which receive the full effect of the sun are of a bluish-purple, and a slight musky flavor; but, when partially exposed, they are of a lilac hue, and those which grow entirely in the shade are of a translucent white, sweet, and devoid of musk in their taste. The fruit is earlier in ripening than that of the preceding variety, and, when allowed to remain on the vine until perfectly mature, the pulp nearly disappears. It is esteemed as a table grape, and has also been manufactured into an excellent wine. The original vine is said to have been procured from the banks of the Catawba, and planted in the garden of the late Mr. Schell, at Clarksburg, in Maryland, and has been known to bear nearly eight bushels of fruit in a single season.

4. V. L. ELSINBURGENSIS, Prince. *Elsanborough Grape-vine.*—This variety is noted for its sweet, juicy fruit, which is free from pulp, and musky taste. The clusters are of a medium size, with loose berries of a blue color, which are said to make an agreeable wine. Its foliage is of a pale-green, and resembles that of the wine-bearing grape of Europe, more, perhaps, than that of any other American variety. It somewhat resembles the Isabella in its bark and wood, but its fruit is thought to assimilate more nearly to that of the Meunier, of France. The original vine

was found and brought under cultivation by Dr. Hulings, in Elsanborough, in New-Jersey, where, undoubtedly, it was indigenous.

Soil and Situation.—The Isabella grape-vine flourishes best in a soil that is neither poor nor exceedingly rich, rather loose than compact, moderately moist, instead of being wet or very dry, and is free from an excess of salts, pernicious gases, and corruption; and in general, land recently cleared of wood is preferable to that which has been for some time under tillage. The situation should be chosen on moderately rising ground, rather than on that which is plain or abruptly steep, and the aspect should be inclined toward the south or east, sheltered both from the wind and intense heat of the sun, particularly during the latter half of the day, but not so much so as to impede a free circulation of air. The climate should be rather dry than moist, and warm instead of being cold. A doctrine advanced by various authors is, that the region of the maize and peach culture is also that of the wine-bearing grape of Europe. By parity of reason, the Isabella, and several other varieties, which are equally or more hardy than the European species, may be successfully cultivated from Mexico to those parts of America where the maize, or Indian corn, is to be considered a sure crop; that is, they will succeed along the shores of the Atlantic, in any parallel southward of the forty-third degree of latitude, and much farther to the northward, west of the Rocky Mountains.—The Isabella will also often prosper under circumstances considerably at variance with any of those above stated, but its fruit will not be of so fine a quality, nor so rich in its flavor.

Propagation and Management.—The Vitis labrusca Isabella, like all its congeners, may be propagated from seeds, by cuttings or layers, and by grafting or inoculation; but the mode almost universally adopted is by cuttings from the branches and roots. A simple, detailed account of the growth of a vine, from its separation from the parent stem to the period of perfecting its fruit, perhaps will convey the best idea of the process, and we will offer the following, as deduced from experience:

It was the opinion of L. Junius Moderatus Columella, a distinguished writer on husbandry, who flourished more than eighteen hundred years ago, and who owned an extensive vineyard in that part of Old Spain now called Arragon, that no kind of land whatever can be fruitful unless it be diligently, carefully and skillfully tilled, more especially when employed for vineyards. "For a vine," said he, "is a delicate, tender and weak thing, and can by no means bear with hard usage; and, for the most part, it is consumed by too much labor, and bearing too great a quantity of fruit; and, if you do not restrain it within due bounds, it perishes by its own fruitfulness.—But when it has, in some measure, strengthened and hardened itself, and attained, as it were, to the vigor of youth, it may prosper under neglect. But a young vineyard, while it is growing up, unless it receives due care and attention, will be reduced to the poorest and most starving condition, and will pine and waste away in such a manner that it can never afterward, by any experience whatsoever, be recovered and restored. Therefore, the foundations, as it were, must be laid with the greatest care; and, from the first day of planting, it must be managed like infants, with unceasing attention—which, unless we do, all our expenses will be laid out to no purpose, nor can the proper season of anything be recalled when once we let it pass." First, then, let us select a proper site of ground, and proceed at once and trench it to the full depth required. If it be situated on a plain, or in a valley, it should be dug two feet in depth, and on rising ground three; but on a hill-side, somewhat steeper, it should be turned up at least four feet, in order that the roots may penetrate beyond the reach of drouth. If the cuttings are intended to be planted in drills or rows, let there be formed trenches three feet in length, two feet in depth, and the width of a spade—leaving intervals or baulks, a yard in length, between the trenches, till the row is finished. Then, with good virgin soil, if it be at hand—if not, let it be procured from the woods—let us fill the trenches therewith, mixing it at the same time with a due proportion of leaf-mould or well-rotted manure, or, what is still better, the leaves and husks of vines, or grape-seeds, in order to quicken and strengthen the growth of the plants. If a vineyard be the object which we have in view, let the rows or drills be trenched from five to ten feet asunder, according to the surface of the ground and the latitude of the place. If the situation be on a plain, in a high degree of latitude, the rows should be eight or ten feet apart; but if it be on the side of a very steep hill, or in a low degree of latitude, five feet will be sufficient; and on moderately inclined surfaces, or in higher latitudes, six or eight feet apart will be all that is required. With regard to the direction of the rows, and the hight to which the vines should be trained, they may run in a manner that will allow them to face any point of the horizon between south and east; and they may be supported on props, or trellises from six to ten feet in hight, and even more, according to the vigor of the vines.—But in cities, and about houses in the country, single vines may be trained on the sides and ends of buildings, along the sides of fences, or on the trunks and branches of trees.

The most favorable season for planting the Isabella grape-vine in the United States is when the red-flowered maple is in bloom, which usually occurs in Georgia from the 20th to the last of February, and five or six weeks later near Philadelphia and New-York. In selecting the cuttings for a vineyard, they should be of one variety, and taken from the most fruitful part of the vine. Let us not con-

tent ourselves with single clusters, but those which are the most prolific. The greatest proportion of fruit grows from the buds on the last year's shoots next to the old wood, with the exception of the nearest eye the top buds being unfruitful and seldom bearing at all. Some prefer to plant cuttings containing a considerable portion of the old wood; but, as it is not always prudent nor economical to mutilate a favorite vine too much, it is best to select fruitful cuttings of the last year's growth, with the wood well ripened. They should be of a moderate size, short-jointed, and containing from six to eight eyes or buds in each. They should be cut off transversely from the vine, with a sharp knife, close to the old wood, and not less than two inches of blank wood should be left for the protection of the terminal buds. The ends of the cuttings that are to remain above the ground should be cut in an oblique direction, and the sloping side should be opposite the side containing the uppermost bud. If possible, they should be planted in calm weather, immediately after separation from the parent vine, and be obtained from a soil, situation and climate similar to those in which they are intended to grow; but, if any difference in these respects should unavoidably occur, it will be better to transplant from a poorer to a richer, and from a dryer to moister soil, as also from a colder to a warmer climate. But, should it be necessary to convey the cuttings from a distance, their lower ends should be immersed in a composition of fine earth, well mixed with linseed or other oil, of about the consistence of tar, as soon as they are cut off from the parent stock; at the same time taking the precaution not to cut off the top ends till the moment they are to be used.

Management during the First Year.—The ground having been prepared in the manner above described, the cuttings are next to be planted in the centers of the trenches, so that each terminal bud will be even with the surface, and directed toward the south. Then the earth must be firmly pressed round each plant, and, should it subsequently settle and leave more than one bud above the ground, more earth or mould must be added to bury them up.

As soon as the season becomes hot and dry, it will be necessary to protect the cuttings from the mid-day sun, by means of matting or other materials, which should be removed toward evening, and allow them to remain uncovered until the next morning, at about the time of the disappearance of the dew.—Strict attention must now be observed in keeping the soil around the cuttings continually moist, and, should not this be effected by natural means, it must be done by sprinkling rain or river water over them, or, what is still better, soap-suds, or other stimulating fluids, specially prepared for the purpose, but not too strong. Soon after the cuttings begin to take root, which may be known by the swelling of the buds above the surface, young shoots will gradually protrude, and the plants will require but little attention during the remainder of the season, except an occasional hoeing, to destroy the weeds, and to loosen the soil in order to admit the air and moisture about the roots. Should the season prove dry, however, and the earth around the plants become parched, it will be necessary to irrigate them frequently with rain or river water, or with prepared liquids as suggested above. Early in autumn, rub off all the buds from each plant, except two, which are to be reserved for training the ensuing year.

The method of managing the vine from the first to the sixth year, as practiced by Mr. B. E. Valentine, of Philadelphia, and published in Hoffy's "Orchardist's Companion," for 1841, is the same as that recommended by Clement Hoare, a highly esteemed writer on the cultivation of the vine, and whose mode, with a slight variation for climate or seasons, is believed to be best adapted for this species of culture of any practiced in the United States. "On the first of December, or as long as the weather remains open," says he, "the soil round the roots should not be covered over; but, as soon as frost comes, a good covering of litter or well-rotted manure must be laid over the ground, as far as the roots extend; and, if the weather be very severe, it will be better also to cover over the stem to the depth of five or six inches above the top of it. The young plant, being thus well protected from the severity of the winter, may remain in this state till the first of March.

Best Water for Plants.—It is well known that rain water is much better than spring water for promoting the growth of plants: this is owing to the former containing ammonia, and which is abundant in liquid manure. Pounded carbonate of ammonia mixed with water will quickly show the efficacy, when sprinkled on grass.

For the Plough, the Loom, and the Anvil.

DESULTORY NOTES BY AN AGRICULTURAL READER.

UNTHINKING farmers, whose "name is legion," get ruined gradually, and are finally sold out, without knowing what hurt them, for want of attending to the truth conveyed in the following few lines. I find them written on the fly leaf of a volume of the Memoirs of the Pennsylvania Agricultural Society, in the handwriting, I believe, of the late Dr. S. MCCULLOH, who owned a farm adjoining the Central Race Course, near Baltimore. Should the reader say there is nothing in it that is new, I would only answer that it is none the less instructive and valuable for being old, while the neglect of the truth, and the practice it inculcates, is on that very account the more disgraceful to those who do not heed it :—

"When the value of the crop does not exceed that of the labor, seed, rent, &c., both the owner and the public suffer loss, at least equal to what the ground would have yielded in pasture; and whoever continues, injuriously to labor land for a crop to which sufficient feeding manure has not been administered to give rational expectation of a profitable result, not only hurts his own interest, but is the enemy of society."

In the same volume, same manuscript, I find the following memoranda, which, for the very reason that a judicious man thought it worth while to transcribe, we judge it worth while to preserve :—

Fence Rails.—For post and rail, $1 to $1 10 per cwt. *Posts*, $4 per cwt. *Worm rails*, 75 cents per cwt. *Rails* for garden, 60 cents per hundred. *Stone fence*, 3 feet at base, 9 inches under ground, 4½ above ground, 15 inches broad at top; cost of building $1 to $1 25 per perch of 16½ feet in length. [Of course the farmer found the stone.]

To measure the contents of a log in solid feet of timber, take one fourth of the girth and multiply the length of the stick by it.

	Fahrenheit.
POTATOES, whether in spring or autumn, have their leaves affected and their growth checked by cold at	30
Ditto—The stem attacked and its further growth prevented, and if in autumn the root makes no further progress at	28
Green Peas and Barley, when the ear is first becoming milky, spoiled at	2
Beans, when green or wet,	27
Oats, when the ear is milky,	26
Ditto, ditto, when green, and the ear watery, on *porous soils*, not much hurt at	25
Ditto, ditto, on firm clay,	22
Clover in the tender leaf hurt at	20
Clover and rye grass, in May or June, the crop is ruined at	23
Turnips on the ground in winter, injured at	8

"It is said these hard frosts do not injure plants unless they continue till the sun be above the horizon; when the frost goes off before morning, and the sky is overcast with fresh clouds, plants escape unhurt, though they may have suffered a pretty severe frost during the night. The philosophy of this well-known fact is obvious: it is not the frost, even though 8 or 9 degrees below the freezing point, that primarily injures the vegetable; it is the sudden transition from cold to warmth, and the consequently too rapid expansion occasioned by the heat of the solar rays, that tears

asunder the tender vesicles of the plants, and is often fatal to their future growth."

All the philosophy of the above, which we find by accident in this old book, has lately been brought forward in England as a new discovery.

The proportion of live to net dead weight in sheep is as 20 to 12. Thus, a sheep weighing 100 alive, will give 60 pounds of "butcher's meat."

As emblematic of the esteem in which *wool* has for centuries been held in England, the Lord Chancellor's seat is made of wool covered with velvet, and called the *woolsack*. On the same principle, considering how many hundred thousand dollars revenue are lost to the farmers of the several States from the reverence paid by our law-givers to curs of "high and low degree," our Chancellors' seats should be made of *dog's hair*, and be called the *dog's-hair sack*.

In an essay to which the prize was awarded by the Royal Agricultural Society of England lately, the writer says:—

> The disuse of such fine wool bred in England in making English broadcloth has arisen from two causes: First, [he says,] a *slight deterioration* in the quality of fine British wool for fulling purposes; and secondly, the increased attention paid in recent years to the growth of wool in Spain, Germany, Austria, &c., where the efforts in improving the fineness of the fleece have been seconded by *natural causes,—warmer and drier climate, a somewhat arid soil, and consequently not so luxuriant a pasture.*

This should be encouraging to landholders in Georgia, Alabama, Texas, &c. Our Mexican territories are destined to be great sheep walks; full protection to woollen manufactures would soon assure it.

Those who rear domestic animals in mountain regions will do well to remember, that every additional elevation of 366 feet is equal to a fall of one degree of temperature.

One fifth of the cattle formerly perished by *starvation* as a regular system in England, according to Youatt. How long since farmers in some American States were sadly "put out" if there were not *murrain* hides enough to shoe their people?

Sea and Land Breezes.—Every one has read or heard of them; but all don't know the cause. It is this: Through the day the land is more heated by the sun, and as warm air is lighter and gives place to colder air, the motion of the air (in other words wind, which is air in motion) is from the sea to the land—but during the night, the land being cooled by radiation, the motion of the air is in the opposite direction; and then the sailor at the helm feels the land breeze coming off to cool his brow, and dispose him to meditation, and to think of wife, children, sweetheart and friends. Thus if a town takes fire, as New-York did, in a calm morning, the air becomes quickly rarified and the wind rises and comes in with a rush to fill up the vacuum. So a bladder filled with

cool air, will soon burst by its expansion when exposed to the heat of the fire. That's the cause of *sea and land breezes.* These may appear to wise men to be small matters, but the philosophy even of many such things is not understood by some would be very wise men!

AMERICAN farmers are apt, and have even *been taught*, to undervalue the *importance of draining.* The following remark by an able writer on the effects of climate on cultivation in England, will perhaps serve to impress it on the mind of the reader:—

Now, all the rain that falls upon our fields must either be carried away by *natural* or *artificial* drainage, or, having thoroughly saturated the soil on which it falls, be left upon the surface to be carried off by evaporation. Now, every gallon of water thus carried off by evaporation requires as much heat as would raise five and a half gallons from the freezing to the boiling point! Without going to extreme cases, the great effects of the heat thus lost upon vegetation cannot fail to be striking, and I have frequently found the soil of a field well drained higher in temperature from 10° to 15° than that of another field which had not been drained, though in every other respect the soils were similar.* I have observed the effects of this on the growing crops, and I have seen not only a much inferior crop on the undrained field, but that crop harvested fully three weeks after the other, and owing to this circumstance and the setting in of unsettled weather (which frequently in our climate does set in about the autumnal equinox,) I have seen even that crop deteriorated fully ten per cent. in value.

I leave you, Mr. Editor, to say, whether these are not facts and principles which ought to be taught the sons of farmers while at school! Instead of which they are fed on the namby-pamby diet served up in "*Readers for Academies and High Schools, consisting of Selections in prose and verse,*" as for example: "*King Henry's visits to Wolsey's House*"—"*A Poet's Praise of his Lady*"—"*A Moon-light Night with fine music,*" &c.

SPRENGEL on Animal Manures, supposes that a cow produces 15,000 pounds of urine yearly. On this subject, Mr. Pusey says one farmer distributed the urine of 30 beasts *unmixed* with water, having so kept it throughout the winter. "I feel bound [he adds] to point out the heavy loss he has thus incurred." According to Sprengel the contents of a cow's urine stand thus:—

Water	92.624½
Urea	4.000
Free ammonia	205
Other matters	3.171
	100.000

* Since writing the text, I have read, in the "Quarterly Review," an article on Draining, and in which I find the writer takes a similar view of the bad effects of leaving land undrained; and states, that 1 lb. of water evaporated from 1000 lbs. of soil, will depress the temperature of the whole 10°. Now, the temperature of the ground 3 feet below the surface in England is rarely more than 46° to 48°; and hence rain falling during summer often of a temperature of 60° to 70°, raises the temperature of the soil as it filters through to the drains; and this is, doubtless, one reason of the fact I have often proved of the higher temperature of the soil in drained than in undrained land. It also appears, from experiments made by Mr. Parkes at Chatmoss, that the temperature of the drained soil averaged 10° more than that of soil undrained. Owing to the cause before stated, the temperature of the soil in drained land was found greater after a shower. This was, doubtless, owing to the greater temperature of the water carried down into the soil. This, as the article quoted states, is a reason of the comparative luxuriant appearance of wheat in undrained land during winter, for then the water in the land is of a higher temperature than that falling in rain, and the drained land is then colder than undrained. It appears that this winter warmth and summer cold is remarkably unfavorable to the growth and ripening of grain.

The urea is the matter from which is formed by fermentation the ammonia which we seek to detain, and Sprengel, desiring to ascertain how far water would serve the purpose, left one portion of the same urine pure and another portion mixed with an equal quantity of water: both to stand for a month. The result was as follows:—

Pure Urine.		Mixed Urine, omitting the water added.	
Water	95,442	Water	93,481
Urea	1,000	Urea	600
Ammonia, partly uncombined	487	Ammonia	1,622
Other matters	3,071	Other matters	4,297
	100,000		100,000

"The addition of water," Sprengel remarks, "has this advantage, that the diluted liquid contains nearly four times (more than three times) as much ammonia as urine left to putrefy in its natural state, though it retained only 0.4 less of urea."* He supposes that a cow produces 15,000 lbs. of urine yearly, and that by leaving pure urine in a tank we should thus lose 162 lbs. of ammonia, which, at Mr. Way's estimate of 6d. per lb., would be a yearly loss of four pounds sterling per cow; and this too, as compared with the mixed urine.

The loss of ammonia on the mixed urine is severe, amounting in fact to one fifth. Well may Sprengel say, "Whoever is obliged for want of straw to collect the urine separately, whoever, if compelled to do this, mixes no water with it, or fails also to employ some neutralizing substance to combine with the ammonia, suffers a loss of manure which exceeds all belief."

In Switzerland they think so much of liquid manure, and are so careful of what we throw away, that they withdraw the straw litter from their cattle twice a week to *wash and replace it!* Liquid manure, however, cannot come into general use in this country; labor is too dear; the handling is too expensive. The most that can, and *that* ought to be done is, to have the barn-yard dished, its bottom well covered with mould and litter, and a tank and pump in the centre of it, to pump out the liquid occasionally, and with a hose spread it on the "mixen," as it is called, to prevent fire, fang, and promote fermentation.

Agricultural Improvement in the last Eight Years.—On this subject an English writer gives a striking case of the economy of *cutting* turnips for sheep. He says:—

The crop being well grown, it only remains to feed it well off. To say that for the fatting flock this should be done with the turnip-cutter, which by saving exertion to the sheep, *saves waste of his vital force*, and therefore saves food, will sound to most farmers like telling them to plough their land. Still there are districts where even the turnip-cutter is unknown. I have therefore endeavored to ascertain the profit of turnip-cutting. "If, of two lots of lambs, the one received, during winter, cut turnips, the other uncut turnips, the fold with cut turnips would be *worth* 20 *per cent.* more than the other fold. The former would sell for forty shillings a head, if the latter fetched thirty-two shillings, and the cost of cutting would be *one* shilling per head, leaving *seven* shillings clear profit upon each sheep." If this statement had been made by an amateur agriculturist, one would have been rather skeptical. It was given to me word for word by two experienced practical farmers; and I only write it down from their mouths for the consideration of their brethren in any benighted districts of England, or even Scotland, if such yet there be. Let them consider that 7s. per sheep upon turnips comes to 70s. ($17.50) per acre upon the turnip crop, nearly the average rent of land for the four years' course, till the turnips come round again. And what is the investment of capital? *Five pounds* for one best Banbury turnip-cutter, which will last for five years. We ought to hear no more of the extravagance of high farming. Your real spendthrift farmer

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*Sprengel on Animal Manures. See translation, Journal, i. 455.

is the man—penny-wise and pound-foolish—who gives whole turnips to tegs, and indulges in the luxury of couch on his fallows. Everybody, too, knows that mutton may now be grown in one year instead of four; and it would be idle to dwell on the excellence of our three great breeds; but it is not so well known how well half-bred sheep answer for early feeding.

Besides turnips and mangold wurtzel, other winter-fodder crops have been tried in England. "The white carrot is less afraid of drought than the turnip, because its deep root always burrows into moist earth, but he is rather troublesome from the necessity to dig him up and to store him; yet as 30 tons (60.000 lbs.) may be grown to the acre, the white carrot should not be abandoned upon free sandy loams."

What follows about potatoes—the reason why they should be cooked for stock—and what is said about the Jerusalem artichoke, appear to be particularly worthy of note. I want to see some of my Southern friends, whose hogs run at large—some of them even in their meadows and corn-fields—plant the *Jerusalem artichoke* in their woods and swamps. I believe, if protected for a year or two, it would offer a perpetual resource for their hogs afterwards. I am not sure that it was not so destined by Providence:—

The potato is well known to suit the west side of England; and as food for pigs does not suffer greatly from a moderate attack of the too famous disease, since they eat it when steamed; and steaming is necessary even for sound potatoes, as they consist largely of starch, the cells of which require to be burst by heat, this is the only kind of farm-cookery about which we may feel certain that it will answer; at least I feel doubtful about steaming straw; but potatoes steamed, mashed, mixed with barley meal, and left to turn sour, will, I know, fat a hundred hogs well in an open farm-yard. I mention this, because desirable as good buildings are, that work must be a slow one, and we cannot wait until it is done. In agriculture, as in other affairs, shifts must be made. If our cultivation be not improved until all our farmers have ten pounds per acre of capital, and all our landlords have put their buildings in apple-pie order, many of us, I fear, may never begin. There is another tuber, the Jerusalem artichoke, which, as food for stock, may be substituted for potatoes, and does not require to be cooked, because instead of starch it contains a similar but peculiar substance, Inuline. Its yield I have found to be on a par with the potato, about 10 tons, and it is equally nutritious. It is a field crop in Alsace; and I have a piece which has stood for five years. It is the least troublesome of all crops, taking care of itself. The roots are dug up when wanted in winter, dreading no frost; and so many remain behind that you have only to give a ploughing in spring, with a coat of dung, if required. It deserves to be tried on a small scale, in any out of the way field.

Fifty dollars an acre is the general floating estimate in England to carry on "*high farming*"—that is, the tenant renting 200 acres should have $10,000 in hand to lay in the proper description and quantity of stock, implements, manure, &c. But Mr. Pusey says, "Farming myself, of course high, I cannot bring my own investment to more than $30 an acre, a sum which I believe, with sheep farming at least, to be an ample allowance for the highest possible farming." There is nothing more deteriorating to American agriculture than the general want of a sufficient number of *well-contrived implements and machinery*, unless it be the forgetfulness of farmers, *how indispensable it is to restore* the elements of fertility that are constantly extracted from and carried off the land, and more especially where the system followed is grain, and tobacco, and cotton cultivation; the produce to be carried and consumed off the land, instead of root culture under which the produce is consumed *on the land*.

ON THE HEADS OF ANIMALS.

VARIETIES OF SHEEP.

No part of the frame-work of animals, whether races of men or beasts, serves so well as the *head* to indicate the family to which they belong even if it does not show the particular temper and character of the individual.

Thus people accustomed to notice tne marks that distinguish from each other the various breeds of horses and cattle at once, on a view of the head alone—the fine muzzle, full eye, thin skin, silken coat, well-defined veins, and hard flinty bone of the high-bred southern courser, will at once distinguish him from the soft-boned, coarse-haired, cold-blooded, flabby and phlegmatic Conestoga; and in like manner, on a view even of a herd of beef cattle, will be prepared with confidence to say, as it passes—This is touched with the blood of the Alderney, or Channel Islands breed, as seen in the ewe neck and deer-like head; that shows the neat head and square frame of the short horn; this again betrays the blood of the Hereford, and that of the Devon, while that beyond sports the long drooping horn of the Bakewell, carrying all his fat veneered on the outside of his frame.

Here we give the *heads* only of two well-known breeds of sheep. The first is that of a Cheviot tup.

The only importation of this race, of which we are aware, was by the Farmer of Marshfield, who probably designed them for his native granite hills of New-Hampshire, so well typified by the compact, close-grained, solid nature of his own mind, and mode of reasoning.

The name of this family of the ovine race, implies their origin in the Cheviot Hills of Northumberland. They occupy, in fact, nearly all the pastoral hills in the south of Scotland, and the best part of the Grampian mountains, and may be regarded as a hardy race, and ought, one would think, to be well suited to the mountainous ranges of our country from Alleghany to Alabama—a high, moist, and verdant, but healthy and delightful region, that needs only classical associations to elevate it in the public regard, even above the far-famed climate of Italy. Yes! there is probably no spot on the globe superior in delightfulness of climate to the mountain lands of Maryland, Virginia, the Carolinas, Georgia, and Eastern Kentucky, and Tennessee.

The wool of the Cheviot is short, thick set, and of rather fine quality, fit for the manufacture of inferior broadcloths. In this breed, the fore-quarters are lighter, in proportion to the whole carcass, than in the Bakewell. The flesh is said to be "fine-grained, often well intermixed with fat, and is generally esteemed for the table;" but like our frontier settlers, they have rather a disposition to rove and stray off, and do not come to maturity at so early an age as the Dishley or Bakewell, with the blood of which the

Cheviot would probably mingle kindly, giving to the former (a more artificial breed) more hardiness of constitution.

The portrait which illustrates this sketch represents the head of a Cheviot tup, which gained the first prize of his class at the Highland Agricultural Society's Show at Aberdeen in 1840. It will be observed that its face is longer than that of the Leicester, muzzle not so fine, eye not so full, ears set not so high and handsomely on the top of the head, while it resembles the Leicester in the white face and want of horns.

The next are portraits of quite a different character, being those of a "black-faced" *ram* and *ewe*.

The first is that of a ram exhibited at the Highland Agricultural Society's Show at Berwick-upon-Tweed, in 1841, where he took the first prize of his class.

As indicative of the long time and care with which this breed has been kept distinct and cultivated, notice the tapering face, small muzzle, and full eye! The arched nose always possessed by the black-faced ram, is said to denote boldness and courage. The legs, like the face, are covered with mottled or black hair; the horns are highly picturesque, and will bring to the remembrance of many of his old guests, one that was kept filled with snuff of the most exquisite perfume, always lying on the counter of the bar of the City Hotel, Baltimore, in the life-time of "King David," who boldly led the way in teaching the proper structure and philosophy of hotel-keeping.

The wool of the black-faced sheep is long and coarse, which renders it of little value in manufacturing. The carcass, however, is well formed, carrying its depth forward to the brisket, better than the Cheviot; yet the entire body being narrow, owing to the flatness of the ribs, gives too much lightness, or want of what is called *substance*, to the whole carcass.

The flesh is said to be fine-grained, high-flavored, and highly esteemed. This breed too, is very hardy, frequenting the highest parts of the heath-clad mountains of Scotland, and requires little care from the shepherd. We wish we had a pair to send to our esteemed friend and most accom-

plished "gentleman of the old school," Dr. B——, proprietor of the Warm Springs, Bath County, Virginia.

The reader may observe that in these cases one is called a tup, and the other a ram. These names are synonymous; but there are technical names employed in all English agricultural writings, according to the age and sex of sheep, with which every liberal-minded reader who is not, would like, once for all, to be made acquainted. At some more convenient moment that shall be done. At present we have not an atom of time or space to spare. Yet in all times and circumstances, we have no ambition, in constancy and force, like that which would lead us to add even one item of useful information to the stock of those who are to look for their bread to the cultivation of the soil, and which never was nor never will be cultivated to the highest profit and effect, when people yield to other and distant countries the profit of working up for their use the raw materials with which God in his goodness provided their own country, paying these other and distant countries for their machine-wrought manufactures with their own products made by *hand power*.

DAIRY MANAGEMENT.

We could never admit any excuse as sufficient to justify any man who keeps even one cow in not having an abundance of *milk* at least, if not of butter, for a family of moderate size. Every Farmer should provide, if only for a few of his best cows, a good *warm* shelter, abundance of litter for a *clean dry bed*, and of suitable food. The cow that won't pay, with such shelter and keep, for a quart of corn-meal a day, and a few turnips, or cabbages, or carrots, or beets, made into a good warm mess, to be given twice a day, with an abundance of cut straw—such a cow is not worth keeping; and he who has such an one, or two or three or more, and will not so provide for them, is not worthy to be called a Farmer, and deserves to have his table served without milk or butter, and, what is still worse, with a dirty table cloth and a dull carver.

As I believe the management of milch cows to be superior here to that in any part of England, it may be interesting to tell you how I manage mine, and the quantity of produce I obtain weekly. I have a boiler containing about 40 gallons, and into it I put about 50 lbs. of turnips, a considerable quantity of water, and about 12 lbs. of straw cut into chaff, and this is boiled for about two hours, when it becomes a dark nasty looking mess; one half of this is taken out into two tubs, and whilst warm 1½ lbs. of bean or pea-meal is stirred into each, and then given to each cow at about 110° of heat. That which is left in the boiler remains till morning, and if well covered up is still warm enough for use: it is then mixed with the pea or bean-meal, as before, and given to the cows at break of day. This, with hay *quantum suff.*, constitutes their daily diet; and I get about 6¼ lbs. of butter from each cow. I omitted to say I have only two cows. The butter produced in this way has no taste of turnips, and the avidity with which the cows eat this boiled mess is a good criterion of its value. When given to the cows, it should be thin and sloppy.—*Mark Lane Express.*

☞ The average price of wheat in England was lower for the past year, than for any year except one, for the last half century. Yet that is held up to us as the great grain market in exchange for which we are recommended to give up our own, and to contend against the down-trodden labor of Europe.

CUTHILL,

(HORTICULTURIST OF CAMBERWELL, NEAR LONDON.)

ON THE CULTIVATION OF THE POTATO, AND VARIOUS OTHER VEGETABLES.

SEEING this pamphlet highly recommended by Doctor LINDLEY, whose "word is the law" in such cases, we procured it particularly to see what had been written by the author, "in competition for the prize of 1000 francs, offered by the Belgian Government, for the best essay on the Potato, with reference to the *Potata rot*." Unfortunately it was received too late for this season, as the chief suggestions are confined to the care and preparation of the tubers intended for *seed potatoes*, beginning by "*greening* them when they are dug." We will preserve the whole essay, however, for what it is worth, bearing in mind to publish it in time for the preparation of the seed potato for planting.

In the meantime there are some points yet in season, and which appear to be worthy of notice. The writer premises that in ten years that he has followed the system he recommends, "*his crops have never been attacked by the disease.*"

Here are a few passages from the pamphlet:—

The ground is prepared during the winter by trenching two spades deep and laying it in ridges. The ridges ought to run north and south, this being of the greatest consequence, in order to allow of an equal action of the sun and air on the sides. Early potatoes should be planted in ridges from 18 inches to 2 feet apart, and the sets be placed at intervals of 9 inches; late potatoes ought never to be planted closer than 2 feet to 2 feet 6 inches from row to row, and 1 foot from set to set.

As soon as the ground is trenched I sow salt and soot, in the proportion of about 2 tons of salt and 30 bushels of soot to the acre. I have used no other manure than this for five years. The planting is commenced by taking up the sets carefully and placing them in the bottom of the first furrow,* the shoots being placed parallel with the ridges. The mould of the first ridge is then laid over them carefully, as the shoots are by this time 3, 4, or even 5 inches long; the next ridge is proceeded with in the same way, and so on, the ground being left at last in ridges lying directly over the sets.

When the plants come up they grow so fast that they smother the weeds if there be any. If May should be very dry as in some seasons, I am obliged to water, and when I do, of course I continue it twice a week until rain comes; for if watering be not continued you only bring up the fibres to be killed by the heat of the sun.

"Mealy" and "waxy" potatoes may be known by the growth of the eye. The mealy potato sends out a slender shoot containing little water; the waxy tuber sends out a bold, stout, but watery shoot. Waxy potatoes are such as have been taken up before ripening or have been allowed to grow during the winter.

COOKERY.—Never buy potatoes that have been washed many days and exposed to the air. Never peel them before boiling, as a large portion of the substance is thus lost; but before boiling make an incision all round through the peel, and another cross ways; this allows the steam to escape and makes the potatoes mealy; if it is not done and the skin does not crack, they will be waxy.

A melon or cucumber grower knows, or ought to know, that if he water his frames too much in dull weather and overgorge the plants, that when dry hot weather sets in, in a few days afterwards, they will have "the canker," and very often mildew; but if he had refrained from watering and shaded in hot sunshine, to give time for a regular evaporation and elaboration of the sap, these diseases would not appear. My forty-eight lights of cucumbers had not one drop of water

* If all the side shoots are removed, leaving only the main shoot, the crop will be ripe or fit to dig nearly a week before the tubers with all the shoots attached, although the crop will not be near so heavy.

this spring until they were in full bearing; the mould was very wet when put in. All greedy feeding foreign plants are liable to disease, according to their kind in such seasons as these; the sun has as much power in injuring the pores and the sap vessels after wet and sunless weather, as frost has in bursting them in winter.

With a temptation to establish a line of steamers from the waters of the lower Chesapeake, in connection with the *great cities of the North*, such as that which invites the people of Virginia and Maryland, how long would Northern enterprise forego the advantage? There are at least 2,000,000 of gaping mouths north of Cape Hatteras that ought to be fed with early vegetables and fruits—cabbages, potatoes, strawberries, beets, corn, spinach, sea kale, melons, cucumbers, rhubarb, turnips, and a thousand things for the tables of the hotels in New-York and Boston, and all the Eastern cities, before they are in blossom where they are now grown. All that is wanting is a couple of *plain, strong steamers*, which always *make business for themselves*, where they are once put on a line, just as the worm spins its riches from its own bowels.—*Ed. P., L., & A.*

PRICE OF WHEAT IN ENGLAND.—The average for the week, by late accounts, was 912 cents for eight bushels, weighing seventy pounds per bushel. How much will that leave to the American Farmer after paying all expenses, as *he* must do who sells abroad! Wheat can be carried to England from the Continent for less money than it can be transported three miles in England.

FREE TRADE *vs.* THE AGRICULTURAL INTEREST.—We perceive, by the official returns, that the average price of British wheat, for the week ending 11th instant, was 38*s.* 1*d.* per quarter, and for the six weeks ending the same time, 39*s.* 1*d.* These facts show how gradual but how certain the decline is. The imports into Liverpool for the last fortnight are enormous, particularly of flour from France. Last week the price of wheat at Brest, *free on board*, was 32*s.*; barley, 14*s.* 7*d.*; and oats 11*s.* 4*d.* per quarter. Wheat is offered at Hamburg, free on board, at 28*s.*, and this, we are told, will leave the shippers a profit. It can be brought to this country in small foreign vessels at a rate of freight lower than the price of cartage here for three miles. The imports from France, as they never were expected, did at no time enter into any of our public calculations, but it is now seen what effect they must have upon our market. The following is the import of wheat, flour, &c., into Liverpool from foreign ports for the fortnight ending 15th January, 1851:—387,449 bushels wheat; 2,562 bags ditto; 25,712 barrels flour; 15,670 sacks ditto; 1,000 barrels Indian meal; 25,469 bushels Indian corn; 34,800 bushels beans; 150 sacks oats; 3,952 boxes cheese; 45 casks ditto.—*Liverpool Mail.*

Let the American Farmer remember that the English shilling is equal to 24 cents, and then let him pronounce on the wisdom of the policy which compels us to import continental wheat and flour, and lay it down on the wharves of Alexandria in the shape of *railroad iron!*

BEANS AS CATTLE FOOD.—In 1825, a sweepstake was entered into by five East-Lothian Farmers, to be claimed by the one who should be pronounced the best feeder of cattle. In order that an equal chance should be enjoyed, Mr. Charles M'Combie, then an extensive dealer in Aberdeenshire, was instructed to forward forty long-horned Aberdeen cattle. These were of the same age, and in equal condition, and were divided as fairly as possible among the five farmers. The price was £18 per head. The cattle were put up to fatten in the second week of September. There was no restriction as to feeding. At Christmas following, they were exhibited at Haddington, and the improvement was most remarkable. The late Mr. Lee, of Skateraw, was declared the winner. He had used boiled beans throughout in feeding. The other competitors fed very high, as on draff and dregs, Swedish turnips, hay, bruised beans, and oats. The superiority of boiled beans was here proved—a fact which deserves the particular attention of cattle-feeders at the present day.—*Dickson on Breeding Live Stock.*

CLOUTED OR CLOTTED CREAM.

Most people are too apt to believe all they hear or read, while others are unreasonably dubious of all that they have not seen.

"The Society for the Diffusion of Useful Knowledge"—one of the most beneficent associations that ever was formed—gives the details for conducting this dairy process. If any reader wishes we will give it; but our object here is simply to correct an error which prevails, that clouted milk furnishes *more cream* or *more butter* than milk treated in the ordinary way. It may be that the butter will keep longer and better, and "come easier" and quicker; but as to *quantity* of cream and butter, we give the following from a prize essay of recent date. There is nothing like such *facts* to establish or to dissipate popular theories; and for ourselves, we deem it useful to *record* them, when they fall under our notice in an authentic form.

Scalded or Clouted Cream and Butter.—It is the practice in the dairies of the west of the county to adopt the Devonshire practice of warming the milk about twelve hours after it has been taken from the cow.

It is a common opinion that the object of the scalding is to extract from the milk a larger quantity of cream and butter. I was once led to doubt the correctness of this opinion, and having made many inquiries, and received the most contradictory answers, I requested an intelligent farmer's wife to make the experiment, and the following is the result:—

Twelve quarts of milk were measured and weighed, so as to be sure that the quantities were exactly equal. The result shows a difference in the weight of butter amounting to 7½ lbs. on every 100 lbs.:—

	Raw.		Scalded.	
	lbs.	oz.	lbs.	oz.
Weight of the milk before setting,	29	6	29	6
Weight of milk and cream before cream was taken off, showing loss by evaporation,	29	2	28	1
Weight of cream when taken off,	3	11	2	8
Weight of butter,	1	6	1	4½

The two specimens of butter were analyzed by Professor Way, with a view of ascertaining whether the scalding process produced a purer butter by separating the cheesy matter more completely from the butter. The result was as follows: in 100 parts of each specimen there were—

	Raw.	Scalded.
Pure butter,	79·72	79·12
Casein, with some sugar of milk and salts,	3·38	3·37
Water, (by loss,)	16·90	17·51
	100·00	100·00
Water by direct determination (drying at 212°).	17·54	17·68

As far as this experiment goes, it tends to show that there is no increase in the weight of butter, but the reverse, produced by the scalding process.

The analysis shows that the proportion of pure butter in butter made from scalded cream is not greater than that which is to be found in ordinary butter; a portion of butter is therefore left either in the butter-milk or in the skim milk, or wasted in the warming.

The practical advantages of scalding cream are, that the butter *is quickly made by stirring with the hand*, or with a stick, without the labor of long churning; and that it keeps much longer.

The first advantage may be explained by the supposition that the bubbles of casein which contain the oily matter are burst by the heat, so that the process of

churning is already more than half effected; but the analysis throws no light on the question why scalded butter keeps best. The best dairy farmers near Exeter both scald the milk and churn the cream. They find that by this plan they secure the advantages of scalded cream butter, and without any loss of quantity worth taking into account.

To the above we take room to add the following, being the last chapter in the appendix of a work entitled, "Agricultural Physiology, Animal and Vegetable; by T. LINDLEY KEMP, M. D.," lately published in London. We submit whether this, too, would not make for a farmer's son a better lesson in reading than much of the stuff that has come down to us from barbarous and despotic times and countries:—

MILK, BUTTER, AND CHEESE.

Milk consists of sugar, casein, salts, globules of fat, (butter,) and water. It often, in addition, contains some aromatic principle, derived from the food of the cow.

After the milk is drawn from the cow, the vital affinities which kept the carbon, oxygen, and hydrogen so combined as to form sugar, cease, and the sugar is gradually converted into another compound of these elements called lactic acid. In popular language this is called the souring of the milk.

The fat or butter is in globules, mixed with the water of the milk. These globules, when the milk is at rest, gradually ascend to the surface, taking with them a little casein, water and sugar, or lactic acid. This compound can be skimmed from the surface, and is known by the appellation—cream.

If this cream be heated, the globules of fat burst and unite together. Being lighter than the other constituents of the cream, they ascend to the surface, forming an oily fluid. This may be taken off, and if put into a cool place, it solidifies, and is in fact pure *butter*. Butter so obtained will keep a long time without becoming rancid, but it has not the taste of the butter of the shops, and is not used as an article of diet.

To obtain butter for food we apply heat, the source of which is mechanical agitation. The cream is put into a churn, the flappers of which are made rapidly to revolve. When by this procedure the temperature is raised from 4° to 10°, the globules burst and adhere together. Butter so procured, besides pure fat, contains sugar, a little casein, and any aromatic principle the cream may possess, and is more suited to our taste than the pure butter obtained by the direct application of heat.

Butter made in this manner will not keep fresh long. The sugar is converted into lactic acid; and butter in which this change has taken place, is said to have become rancid. If an access of sugar be artificially added, then this change does not take place. Common salt and saltpetre have likewise the power of retarding this change. In practice, it is usual to add a mixture of these three substances—sugar, salt, and saltpetre—to butter which it is desired to preserve for any length of time.

Casein may be obtained in a tolerably pure state by adding any acid to new milk, skim-milk, or buttermilk. When this is done, the casein, or curd as it is commonly called, falls to the bottom. The most remarkable property of casein is that it is soluble in a weak solution of potash or soda—that is to say, that it forms a compound with them which is soluble in water.

New milk contains carbonate of soda. In fresh-drawn milk the casein is combined with this, and is therefore soluble in, and held in solution by, the water of the cheese. But as the sugar of the milk is gradually converted into lactic acid, the lactic acid combines with the soda, forming lactate of soda, and the casein, now insoluble in water, falls to the bottom in lumps filled with water.

When it is desired, however, to obtain this casein artificially, it is not usual to wait until the lactic acid is naturally formed, but some acid is added. The one commonly employed, at least in this country, is the muriatic acid, as contained in the dried stomach of the calf. When this is added to milk, skim-milk, or buttermilk, the casein falls to the bottom. It is taken out of the fluid, subjected to strong pressure, to squeeze out the water which it has mixed up with it, and salted. It is now called cheese.

A SMALL KEY TO UNLOCK THE DOOR, AND TO SHOW THE BASIS OF THE SCIENCE AND PRACTICE OF AGRICULTURE.

EXAMINE it, Farmers, and then say whether it implies any necessity for *appropriate* education and study for your sons, who are to live by tilling the soil.

Alas! with too many of you, all that you seem to care about knowing is—to what *party you belong!*—to the lead of what bell-wether you must follow!—all Whigs, or all Democrats, with no solicitude to associate and cement yourselves together, except to gain or to maintain *party supremacy!*—not to see how your sons and your daughters shall be better prepared, by timely instruction, to play the parts they are destined to perform on the active theatre of life.

So far from esteeming the bearing of public legislation on your industry and pursuits, as the *first of all questions*, to be understood and *controlled* by the Agriculturists as a class, do you not forbid any allusion to it in all associations for agricultural improvement?—leaving the question to be discussed and settled only as *sworn partisans*, all being determined, beforehand, to sink or *swim with the party to which you belong*—as servants belong to their masters!

Will you, for instance, when you have read this chapter, hand it over to the neighboring Teacher, and ask him if he will allow it to make one of the lessons in reading taught in his school? one just as likely to open up to your sons' minds matters of useful contemplation, as, for example, the lesson entitled "A LOVE-SCENE BY NIGHT IN A GARDEN,"

"Arise, fair sun, and kill the envious moon,"

selected for the "LITERARY READER" of the latest compilation.

Instead of thus using this key, it is doubtful if the greater number will not say—"Much better had you put into our hands a key to unlock some man's poultry house or dairy, to teach us once again, for the thousandth time! how many hens, and at what cost of food, may be had, a dozen eggs, or as many pounds of butter."

But to the key—examine it and use it as to you it may seem best:—

The vegetable kingdom is placed in nature intermediate between the mineral kingdom, which is submitted solely to the operation of physical laws, and actuated only by means of mechanical forces, and the animal kingdom, in which vital organization is most complex and most perfect, and where physical and chemical affinities are subordinate in energy to the refined influence of nervous power. Every thing in nature is referrible to one or the other of these three divisions, of which the first, the mineral, is distinguished by an absolute fixity of constitution, whilst the materials of which the animal is composed are in a constant state of change. If we consider a piece of marble, it contains carbon, oxygen, and calcium, and as long as it has been a piece of marble, the same proportions of these elements have formed it; but if we consider an animal, it is composed of numerous elements which have little permanence of arrangement. By the very act of its living force, the materials of which it consists die, and are thrown off from the remainder, and other new elements of the same kind must be taken in their place, or else the whole animal dies. The living being, therefore, requires food to supply this want of new materials; for this food it must look abroad in nature; it must prey. The more highly organized animals (carnivorous) prey on those of an inferior vital power (herbivorous): these again on the vegetable kingdom. Thus ultimately the different kinds of plants must supply the means of sustenance to all animal bodies, for in no case is an animal able to assimilate to its organism, or use as nutritious food, a mineral material.

When, however, the term of existence of the animal has expired, and that vitality ceasing, the physical and chemical forces come into play, its constituents are restored to the mineral kingdom. The various elements which had formed its bones and muscles, its nerves and viscera, pass into simpler forms of combination, diffuse themselves in the atmosphere, or are carried off, dissolved in water; or else, entombed beneath the surface, may appear after the lapse of many ages, in rock formations, and thus become the indices of animal existence, of which all other trace might long before have vanished from the earth. From this mineral form the elements of animal existence are rescued by the aid of plants. The vegetable, penetrating with its roots deep below the surface of the ground, stretching with its stems and branches into the atmosphere, and moistened by the showers, takes from these various sources the elements necessary for organic beings, elaborates them into the numerous products which are capable of being used as food, and on which animals are fed. The various departments of nature are thus correlative and mutually compensating. The same elements pass successively fr m the mineral to the vegetable, and from that to the animal existence, and by the dissolution of the latter, again back to the mineral kingdom, to be the foundation of another and similar series. When we see in summer the country rich with luxuriant crops, gay with foliage and flowers, where in winter all had appeared dead and desert-looking; when we find new generations of animals replacing those that die, and that the number of living beings does not diminish, it is important for us to recollect, that there is still no new element added to those already existing on the globe, that the condition of the materials of our earth is one of unceasing change; assuming many forms, they pass from mineral to plant, from plant to animal, and hence the growth and sustenance of an animal depend on the nature of the plants on which it is fed, and the growth and development of a plant upon the nature of the soil and the atmosphere, by which the mineral elements may be supplied to it.

The number of elements which are found existing in animals and plants amount to sixteen: of these the atmosphere and water may be considered as capable of supplying four, carbon, hydrogen, nitrogen and oxygen, and these are they which constitute by far the greatest proportion of every organic substance. The remaining elements, though usually present in much smaller quantity, are not less essential to the healthy existence of the plant, and must be obtained from the soil on which the plant is cultivated. The soil must, therefore, be highly complex in constitution, in order that it may yield those elements. If it do not naturally contain them, they must be artificially supplied, in order that the plants may grow. Each crop removing from the soil quantities of those materials, diminishes its power of producing future crops; and hence to sustain the fertility of any soil, the exhausting tendency of its vegetation must be compensated for by suitable additions. In these few and simple propositions is contained the clue to the most refined and successful systems of agriculture, and the objects of the philosophical agriculturist, as well as the most effective means of practically advancing husbandry, consist in:

1st. Studying the composition of the soil.

2d. Studying the action of plants upon it.

RIDDLE FOR SCOTCHMEN.

Scene: Linen-draper's Shop.

	EXPLANATION.
Old woman (looking at a piece of cloth) to the shopman—Aw oo?	*Purchaser*—All wool?
Shopman—Oo i, aw oo.	*Shopman*—Oh yes, all wool.
Woman—Aw ae oo?	*Purchaser*—All one (kind of) wool?
Shopman—Oo i, aw ae oo.	*Shopman*—Oh yes, all one wool.

New Alimentary Substances for the Working Classes.—The French Consul at the Republic of Ecuador, has brought thence two alimentary new plants of great importance. The tuber of one, called *Hocas*, has the form of an oblong potato; the interior of the substance, however, has a red and yellow color, and the taste is that of a chestnut. The other is called *Millico*, and its form and taste is very nearly that of the potato. Both grow wild and in great abundance near Quito, even in the most meagre soil. Experiments on their propagation are now being made at the Jardin des Plantes, Paris.—*The Builder.*

For the Plough, the Loom, and the Anvil.

ON THE USE OF CHARCOAL.

BY COL. M. P. WILDER.

I NOTICE in the last number of your valuable periodical the request of Mr. Trimble, soliciting advice as to the advantages of charcoal, and the best method of using it as a manure.

I reply with pleasure, but my experience has been on a limited scale, and my operations confined rather to the garden than the farm, on account of the difficulty of procuring it in sufficient quantity for the latter purpose.

My attention was first drawn to the influence of charcoal, by the wonderful experiments of Baron Von Liebig, in the propagation of plants, and the facility with which cuttings were rooted in this substance.

Its use became very general in Europe by amateurs and cultivators of plants, and for a time it was considered as a great fertilizer. Chemists soon ascertained, however, that its chief virtue consisted in its great porosity, being able to absorb 90 per cent. of its bulk of *ammonia*.

As a medium for storing up the volatile portions of manure and compost heaps, and for absorbing the *ammonia* which descends in the snow and rain, it has probably no superior. But what renders charcoal still more valuable is its power of holding in reserve these subtle elements, and yielding them up only as they are wanted for the purposes of nutrition, and as the vital force of the root searches for food.

It will therefore readily be perceived, that charcoal is not only valuable as a component part of manures, but that its influence, *when applied alone*, is highly beneficial. Instances similar to those quoted by Mr. Trimble, where large crops had been obtained from lands on which charcoal pits had been burned years before, are frequently witnessed. In this vicinity a farmer has annually, for the last eight years, harvested extraordinary crops of hay on these charcoal lands, without the application of any manure whatever; and from the indestructibility of this substance, I know no reason why he may not continue to do so for the next twenty years to come.*

One of the most striking illustrations of its efficacy, *when applied alone*, that has come to my notice, was the experiment made by Mr. Hayward of Sandusky, Ohio, many years since, and which, if I am not mistaken, was published either in the last volume of your *Farmer's Library*, or the

* The testimony on this point is by no means uniform; some averring that they could see no difference in the crop where these kilns had been burned, while others assert the contrary. The coal brought to the Washington market from Virginia, a distance of ten or twelve miles, sells for ten cents the bushel; in New-York the price is fifteen cents. They say a cord of pine wood will make thirty bushels, equal to the price for which the wood sells in the same market, $3—in New-York, $5. But the force which would bring the cord of wood will take a hundred bushels of coal Such is the advantage of *manufacturing on the spot*, whenever it can be done. For the same reason that the farmer wants to have the mill, and the smith's shop, and the school, and the store, not only in his own country, but close to his door, he ought to desire to have the Loom and the Anvil close to the Plough; whenever the one can be supplied with the wool and the other the iron, *here at home*. Will the time *ever* come when reason and common sense shall prevail over early prejudices and *un*-common sense!—*Edit. P., L., & A.*

P. S.—The *facts* stated are from plain working men, whom we meet selling coal in the street.

first volume of *The Plough, the Loom, and the Anvil.* The facts I think were substantially as follows: Mr. H. having prepared his coal by grinding in a mill, set apart seven lots of land for experiments, the soil and cultivation being precisely alike on each, except as it regarded the application of charcoal. The result was, that on the lots where *fifty* bushels of coal were applied, there were *twenty-five* bushels of wheat obtained, while on those lots where there was no coal applied the crop was only five or six bushels. It will be borne in mind that there was no other manure administered to the crop, and that consequently the fertilizing properties must have been imparted by the *ammonia* which was stored up in the coal.

This experiment was very satisfactory, but not more so than many others which we have witnessed, particularly in the application of charcoal to fruit trees, plants and garden vegetables; and I have yet to see the first instance where charcoal formed a part of the compost, that vegetation did not grow luxuriantly, producing the increasing and quickening effects described by Mr. Trimble. In fact, it is no unusual circumstance to notice the roots of trees and plants either clasping pieces of charcoal, or piercing them through with their fibres. The best method, where any considerable quantity is to be used, would undoubtedly be to grind the charcoal, and I should prefer that one half at least should be as coarse as Indian corn. As to the amount which may be applied to the acre, I think Mr. Hayward's experience will furnish a good criterion, although I have no doubt a larger quantity than fifty bushels to the acre, for the first dressing, might produce an increase of the crop.

If charcoal is to be applied *alone*, and without manure, the time is not material, except that it should be well incorporated with the soil, either by ploughing in, or harrowing, but not deeply. Mr. Trimble describes his soil as being "generally a strong yellow clay based upon limestone." Charcoal will no doubt prove valuable on these lands, but more so on light soils which allow the salts of manure to leach through; for clay is also a substance which holds securely the volatile portions of manure, and when made fine by the frost or otherwise, is a capital ingredient for the compost heap.

P. S. On recurrence to my file of letters I find Mr Trimble's, but which, from the circumstance of its arriving just as I was on the point of starting on a journey, was laid aside, and being "out of sight was out of mind." From the character of his land, "*limeing*" would not only be a waste, but worse than a waste of time and money, the soil being already sufficiently charged with lime. And here let me drop a word of caution, never to use lime either in conjunction with charcoal or the manure heap, on account of its disengaging the fertilizing gases and sending them off in "thin air." I beg his pardon for the neglect, and fear from the haste with which the above has been written, that it will be of little service to him or others.

Boston, March 4th, 1851. MARSHALL P. WILDER.

WEIGHT OF THE PRIZE DEVON OX.—A correspondent informs us that "the Devon ox which obtained the first prize in Class I. at the Smithfield Club Show this year, and which was purchased by Mr. King of Paddington, weighed 217 stone of 8lbs., and had over 30 stone of rough fat."—[1,736 pounds net, and 290 pounds of rough fat.]—*English Paper.*

ADULTERATION OF COFFEE.—A microscopic examination of thirty-four different qualities of coffee sold in London has lately been made, which showed that with three exceptions the whole were adulterated. Chicory was present in thirty-one instances, with the frequent addition of roasted corn, beans, or potatoes, and in some cases the quantity of coffee was not more than a fifth of the whole article.

WEAR AND TEAR OF BRITISH AND AMERICAN IRON ON THE READING RAILROAD.

TAXATION OF THIS UNION BY THE BRITISH MONOPOLY SYSTEM.

In a splendid oration "On the Life, Character, and Services of John Caldwell Calhoun," delivered by Governor Hammond at the request of the City Council of Charleston, referring to the scantiness of what is commonly called education enjoyed by Mr. C., he says: "But it may be doubted whether, having acquired the use of letters and figures, and being thus furnished with the two great keys of knowledge, there could have been a much better training for the future statesman. Pericles and Alexander were perhaps taught but little more by Anaxagoras and Aristotle, than Calhoun learned from his few books, from nature, and such men. In this school he learned *to think*, which is a vast achievement." Most cordially do we agree with him in the philosophy and the force of the truth here conveyed, especially in this last remark. Hence it is that we have so often said, in the course of more than thirty years of anxious effort to animate and elevate the Agriculturists of our country, as a class, that the great obstacle seemed to be in leading them to form a *habit of thinking!* Could that be done, we should esteem it the accomplishment of a "vast achievement," for thereafter it would be impossible that they should remain contented to pay $20,000,000 annually for the support of men whose province and business it is, exclusively, to *carry side-arms and fire-arms!* It would be impossible for them to see magnificent schools and accommodations provided for teaching to the youth of the country the use of swords and cannon, and not one dollar given for appropriate instruction for the use of the plough and the pruning-hook. It would be impossible for men, exercising the god-like faculty of thought, to see their representatives squandering millions in acres of land and in pensions even for having been "mustered" to the work of war and bloodshed, while their civil officers, however aged and eminent for vigilance and integrity, are swept by the score into abject poverty, at every turn of the political weather-cock. No thinking people, in a word, could remain contented to see the military every where exalted over civil virtues, until all good men shall come to think "the post of honor is the private station"—until every passion that can animate the human heart—avarice, the love of luxury and of power, aye, even ambition, that "malady of every extensive genius," and the noblest of all passions when well directed, are in a fair way to become aroused and enlisted in the cause of blood and slaughter!

With equal truth, as it seems to us, might it be said that could the cultivators of the soil be brought to exercise the power of thought—"a vast achievement," casting off that incubus upon the soul, *party spirit*—it would no longer be possible for them to follow, in search of genuine "free trade," the doctrines of that school *whose seat is in Manchester!* The very location of the sanctuary would lead them to distrust the revelations of the oracle.

"Timeo Danaos et dona ferentes."

The object of "free trade," as taught in the Manchester school of political economy, is that of securing *to England* a monopoly of the power of furnishing the world with cotton and woollen cloth, and iron, at prices to

be fixed by herself. The establishment of this monopoly involves, of course, another one, that of furnishing the sole market for the sale of the food, the cotton, and the sheep's wool, raised throughout the world, to be given in exchange for cloth and iron; and the more perfect this monopoly, the more exclusively England can make herself "the workshop of the world," the more perfect must be her power to tax the farmers and planters of the world by fixing the price of *all she buys*, and of *all she sells*.

The system known to the people of the Union by the name of "protection" has for its object a diminution of the necessity for resorting to the English market for the purpose of either sale or purchase, by the establishment of competition, and thus enabling the farmer and the planter to enjoy that *real* "freedom of trade" which results from *equality of power* on the part of both buyers and sellers—the one having two or more markets in which he may buy, and the other two or more in which he may sell.

The Manchester system of free trade looks thus to the destruction of all competition for the purchase of raw products, or for the sale of manufactured ones, and the establishment in the hands of the people of England of a perfect monopoly of the machinery for the production of both cloth and iron. Protection seeks the destruction of this monopoly, and the establishment of *real freedom of trade*.

The modes of resistance resorted to by the English people for securing the further existence and extension of their monopoly, are numerous and uniformly destructive of the interests of their customers, as is shown in the fact that where her monopoly is complete, as in Ireland, India, and Canada, the consumption of cloth and iron is small, and that it invariably increases in countries where protection is resorted to, and most rapidly in countries where protection is most effective. Thus we consumed, in the *free-trade* period of 1841–2, before the tariff of 1842 came into operation, less than 300,000 tons of iron; whereas in the real free-trade period of 1846–7, under the policy of 1842, before the tariff of 1846 came into full action, our consumption rose to almost a million of tons, whereas it has now fallen to about three fourths of that quantity, notwithstanding our *vast increase of population in the meantime!*

Among the modes of taxation most uniformly resorted to for the destruction of foreign competition, and the maintenance of the British monopoly, and among those against which it is most difficult to guard, is that of the *deterioration of the commodities furnished to the world*. Her cotton goods are a compound of starch and cotton wool, cheap to appearance, but worthless, and therefore dear in reality. Twenty years since it was stated by Mr. McCulloch that the quantity of flour substituted for cotton amounted annually to more than thirty millions of pounds, being the equivalent of seventy thousand bales of cotton, and it is understood to be now more than doubled; and thus is the demand for raw cotton diminished to the extent of a hundred and fifty thousand bales, while the consumption of cloth is diminished because the cost is so great in proportion to its *real value*, when compared with manufactures of flax and wool.

Our attention has been drawn to this subject by some highly interesting facts, to which we now desire to invite the attention of our readers, relative to the wear and tear of American and British iron on the Reading Railroad, and on which we implore them to exercise "the power of thought," for, as Governor Hammond says, "it *is* a power, and the greatest of all." Most of them are, we doubt not, aware that the transportation

thereon is immense, and affords to its officers an opportunity for testing the qualities of iron, such as is scarcely furnished by any other road in the world; and it is obvious from the tables now before us, that they have availed themselves of that opportunity to its fullest extent, an account having been kept in relation to every single bar removed, showing the length of time it had remained upon the road, its condition when removed, &c. &c. The result has been that of proving that for all future repairs or extensions, *true economy* leads to the use of American iron, of which a bar of fifty pounds to the yard is more valuable than an English of sixty pounds.

With the diminution of our domestic competition foreign prices are now rising, and must continue so to do as our furnaces shall gradually pass out of blast, as is shown by the recent advices from England, in which it is stated that the vast orders from this country have caused a considerable advance; and yet so great is the rage for *cheap* and worthless iron, with which to make Western and Southern roads, that the makers of them do not seem to see that they are now destroying the *competition* to which alone the present cheapness is due; thus carrying into practical effect a certain well-known fable of Æsop, called *the Goose with the Golden Eggs.* Our mines and furnaces make competition for the purchase of food, and for the sale of iron, and for the consumption of cotton and woollen cloth; but our farmers, or *their* law-givers, close those mines and furnaces that there may be less competition for the purchase of the former and for the sale of the latter, the inevitable result of which must be *cheap* food and *dear iron.* If they desire good prices for their products, they should seek to diminish the necessity for depending on the British market as the *only one* in which to sell; and if they desire to have iron cheap, they should seek to diminish their necessity for depending on that market as the *only one* in which to buy—thus ridding themselves of British monopoly, which looks to fixing the price of all they have occasion to sell, and all they desire to buy; and thus laying, in the only way in which it can be provided, a foundation and security for real freedom of trade! Will the agriculturists of Virginia think of this?

CONTINUANCE OF ENGLISH INFLUENCE

HURTFUL TO AMERICAN AGRICULTURE.

We have been so long and habitually looking to the so-called Mother Country for every thing—the association in the human mind of all things excellent with the very name of mother is so natural, and when mothers *are* good, so proper in itself—that most Americans continue to look to mother England for all that is superior in every kingdom of nature, in every branch of science, in every field of discovery, and every art and comfort of social life;—in Agriculture and Horticulture, in Sheep and Cattle, in Men and Women.

General Jackson said to Doctor Coleman, "We have been too long subject to the policy of British merchants." With equal truth the *Edinburgh Review* has recently declared the United States to be but "a colony of Great Britain in a matured state"—such is the inveteracy of national prejudices, especially where they have their foundations, how far back so ever, in the relation of parent and offspring.

We are perfectly conscious of entire freedom from an opposite feeling in this case. None can more admire the learning and the loyalty, the eloquence and the enterprise of those who have shed a lustre on the name and the arms of England; but her counsels have been animated in all time by a spirit of monopoly, aggression and conquest, that would lead her to subject the whole universe to the sway of her colonial policy. Far, alas, are we from claiming that the child has not inherited too largely, some of the worst traits of the parent; still, for one, we are of opinion that it is high time for the United States to exercise as well as to claim the functions of real independence of a country with which, patronage and appropriation, "from Indus to the poles," have always been synonymous. In a word, our apprenticeship to England has run out. We have reached the age of adolescence, and having all the materials for self-supply, of what we obtain from her, we should set up shop *bonâ fide* for ourselves, and by means of adequate, efficient protection, *realize* for ourselves those advantages which ages of monopoly and aggression have conferred upon her; and thus prepare ourselves to compete with her for the supply, not only of our own *iron* and *cloth*, but for the supply of the world with things for which Providence has bestowed the materials upon us no less than on England. And this should be done, not by depressing the wages and circumscribing the comforts of American labor down to a level with the starving population of England and of Furope—of countries from which she now derives her supplies; but it should be done by elevating American labor, and protecting it in its elevation. This can be done, as all experience has proved, not by encouraging sloth and idleness, but by a safe reliance on the effects of *competition at home*. Thus has it always happened that every protected article has fallen in price to a fair profit on the capital and labor employed in its production. It's always a cursed, diabolical system which looks to *cheapening labor!* The steadier and the higher the reward to labor, the more ample is the power of consumption, and all wages are expended in some shape or form that brings custom and profit *to the land*. Would that we had seen all this as clearly thirty-two years ago, when we commenced the attempt to enlighten, advance, and guard the interests of the Plough, as we now see it. But to use a vulgar saying, one should never "cry over spilt milk," but go ahead and do the best we can in our day and generation. Having now studied "THE PAST, THE PRESENT, AND THE FUTURE," we find it almost impossible to contemplate any branch of useful industry that does not serve to render more and more apparent our habit of *looking to England* for every means of social comfort, and for every industrial and scientific improvement—aye, even to a degree not only destructive of our best interests but derogatory to our character as an independent nation. Getting English books free of cost, our reading comes chiefly from her, while American authors are neglected.

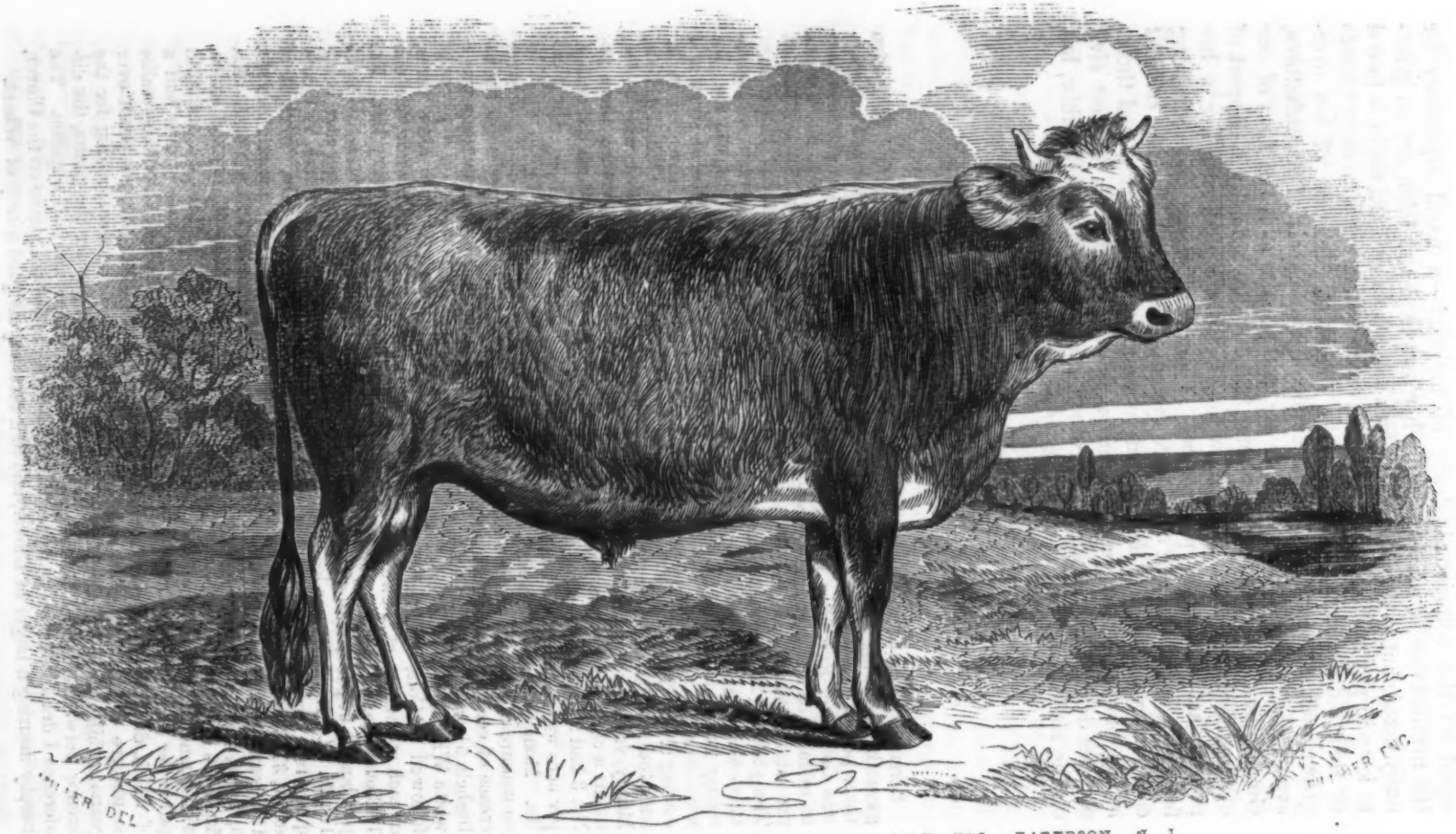
This habit of going to England on every occasion as the great seat of science and workshop of the world, was, however, plainly on the wane, not only with us but with the nations of the world, and the game now is to revive and confirm this ancient but declining admiration and subserviency to the Mother Country, by means of the great Brobdignag Glass House Exhibition to be held there under His Royal Highness, Prince ALBERT, as long as it can be—*made to pay!*

What a blessing would it be to the whole world if English naval supremacy could be once and for ever overthrown, and all countries be made

equal on the common highway of nations!—a naval supremacy for the maintenance of which not only her own land and labor are so grievously taxed, but in opposition to which the whole civilized world is forced to keep in pay millions of men, whose entire business it is to carry swords at their sides and muskets on their shoulders. In view of her overgrown military power, kept up to enforce her monopoly of manufactures, even we are obliged, distant as we are, and popular as is the form of our Government, to expend already some $20,000,000 annually in support of our military establishments. How long before we shall rival her in her pension list of 50,000 pensioners? There is, however, one redeeming feature in her odious and oppressive system,—she pensions too for *eminent civil services*, while we, Republicans as we are, only shelf and feed those, at the public expense, whose *vocation is war*, leaving the highest civil abilities dependent, not on talent, worth, and service to the Republic, but on the *vicissitudes and corruptions of party!!*

GUANO.

SITTINGBOURNE.—GUANO.—At a late meeting of this Association, Sir J. M. Tylden gave the following results of experiments with guano:—Last autumn, I set apart three pieces, of a quarter of an acre each, of Spalding Wheat. The previous crop was Cole after Rye, after Wheat, the Cole and Rye being fed off. On No. 1, I put no manure, on No. 2 guano at the rate of 4 cwt. per acre, and on No. 3 guano at the rate of 2 cwt. per acre; the cost of No. 2 being 2*l.*, and of No. 3 1*l.* per acre. The yield of No. 1 was 3 quarters 4 bushels, and the weight of straw and horse-meat was 1664 lbs. per acre; the weight of a bushel of this Wheat, 61½ lbs.; the money value at 5*s.* per bushel for the corn, and 6*d.* for every 36 lbs. of straw and horse-meat, gives 8*l.* 16*s.* No. 2 had 4 cwt. of Peruvian guano harrowed in at sowing time. The yield per acre was 4 quarters 4 bushels and 6 and a half gallons, and the weight of straw, &c., 3936 lbs. The weight of a bushel was 61 lbs. Money value as before, 11*l.* 16*s.* 4*d.*, from which deduct 2*l.* for manure, there remains a clear gain over no manure of 1*l.* 0*s.* 4*d.*, or over 50 per cent. on the outlay. No. 3 had 2 cwt. of the same guano, sown at the same time as No. 2. The yield per acre was 4 quarters 1 bushel 6 gallons. Weight 61 lbs., and of straw, &c., 3312 lbs. Money value, deducting 1*l.* for the guano, 9*l.* 14*s.* 4*d.*, giving a clear gain over no manure of 18*s.* 4*d.*, or more than 85 per cent. In both these experiments the increase of corn has more than paid for the manure, for in No. 2 the increase was 8 bushels 6½ gallons, and in No. 3, 5 bushels 6 gallons. I also marked off 4 pieces of white Wheat, of a quarter of an acre each; two after Clover, two after Tares, followed by Cole, both fed off after Wheat. One of each had no manure, and one of each at the rate of 2 cwt. of Peruvian guano, top dressed in February last. No. 1, Clover lea, no manure, yielded 4 quarters 1 bushel 5 gallons per acre. Weight per bushel 60¾ lbs., with 3020 lbs. of straw, &c.; the money value per acre being 10*l.* 9*s.* 8*d.* No. 2, Clover lea, with guano at the rate of 2 cwt. per acre, yielded 4 quarters 4 bushels 5½ gallons per acre. Weight per bushel, 60¼ lbs. Weight of straw, 3768 lbs. The money value per acre, after deducting 1*l.* for manure, was 10*l.* 15*s.*, leaving only the small profit of 5*s.* 4*d.*, or rather more than 25 per cent. No. 3, Tares, and no manure, yielded 4 quarters 1 bushel, weighing 60 lbs., and straw, &c., 2708 lbs.; the money value of which was 10*l.* 3*s.* No. 4, Tares, &c., manured with guano at the rate of 2 cwt. per acre, yielded 4 quarters 7 bushels over half a gallon per acre, weighing 50¾ lbs.; weight of straw, &c., 3324 lbs.; the money value of which, deducting the price of manure 1*l.*, was 11*l.* 1*s.* 3*d.*, giving a profit over no manure of 18*s.* 3*d.*, or over 85 per cent., the corn more than paying for the guano; whilst on the clover lea the corn alone did not pay for the guano, the difference between that and no manure being only 3 bushels and half a gallon. The inference I draw from this is, that it would be better to use the guano on the Clover, thereby insuring a larger of Clover, and to a certainty as good a crop of Wheat.



HUNGARIAN BULL, KOSSUTH.—PROPERTY OF R. J. COLT, ESQ., PATERSON, N J

PORTRAIT OF HUNGARIAN BULL, KOSSUTH,

PROPERTY OF R. L. COLT, ESQ., PATERSON, N. J.

THIRTY years ago, 8th October, 1821, the late Judge Peters of Philadelphia addressed a letter to the editor of this journal, then conducting the *American Farmer*, on the subject of the *Culture of Flax*, *Agricultural Premiums*, *Tuscany Cattle*, *Felling of Timber*, and *Preservation of Bridges.*

We need not say that we are far from going the whole length with the Judge, in the opinion that finer horned cattle are to be seen in other countries than are to be met with in England. True it is, that much more intercourse with that country has made us more familiar with what has been done there to establish and improve the several races of domestic animals; yet it is not to be denied, that in this branch of rural industry, more money has been expended, and that expenditure has commanded more skill and been attended with more obvious and economical results in England, than in any other part of the world. Hence her improved Short-horns, Herefords, North Devons, Ayrshires, and Alderneys, are no where equalled for the shambles, the yoke, and the pail; and the power of money which has given her that superiority will be likely to maintain it;—but who of us that never saw them, shall undertake to say that for the plough and the dairy, the Hungarian and the Dutch may not claim equality with the best of England? For ourselves, we are inclined to think that no importations have more contributed to improve our milch cattle, than those which were made many years since from Holland into Delaware, Maryland, and New-York. There are still, we believe, deep traces of their blood in some that will be on sale at Fordham, in Westchester, on the 24th of June next, as advertised in this number But to the letter from Judge Peters to the editor of *the Plough, the Loom, and the Anvil*, then editor of the *American Farmer* :—

I am pleased with your acquisition of Tuscany cattle. I have no idea that England monopolizes the best breeds of cattle. From other countries and in our own I have seen finer horned cattle than I ever saw in England.* The Flemish working cattle are superior, and no doubt so are those of Tuscany. In both these countries working oxen are the chief reliance for farming purposes. In Tuscany they use them *almost exclusively.* I wish *we* could use mules and oxen more and horses less. We should soon find out the economy.

The stolid preference of the Pennsylvania farmer for large Conestoga wagon-horses in all cases, even where the ox, the mule and the higher bred horse might well supplant them, and their partiality for great, heavy, lumbering wagons, costs that State many hundred thousand dollars annually.† The cattle referred to by Judge Peters were those offered on their ar-

* He and Mr. Jefferson were in London at the same time, and doubtless saw and associated with many of the most distinguished men of the kingdom. Mr. Jefferson is said to have remarked, however, that for genuine wit none of them equalled Judge P.

† In a highly interesting paper, on the progress of agricultural improvement in England during the last eight years, Mr. Pusey relates the results of trials between wagons and carts, which showed that in the latter five horses were more than equal to ten in wagons; and he says: "Here, indeed, since farmers have compared the two systems, no one buys wagons in stocking a farm; but no one likes to buy a new set of carts who has wagons. I should say, they had better sell their wagons while they can, and if they cannot, make a bonfire of them.

rival without any view to profit, but solely for the benefit of Agriculture, and with that intent sold to the writer, by the late Commodore Bainbridge and his friend Purser S. Hambleton, an account of which—"the DUKE and DUCHESS"—may be found at page 269 of the *Amercian Farmer*, vol. I.*

The Hungarian bull and heifer imported by Mr. Colt exactly resemble them in color and in general contour and appearance, except that they are *less light and mule-like* in their figure, deeper in the chest, and heavier in the body. How the heifer may prove as a milker, it is perhaps too early to predict; but there can be little or no risk in believing that the blood of Kossuth, the bull, will greatly improve the working powers of our cattle, both in activity and susceptibility of bearing heat.

As more exactly historical of the importation of this pair of cattle, it is proper to add, that Mr. Colt, ever watchful for what may prove on trial to be valuable additions to our domestic animals, implements, grain, plants and poultry, was prompted to procure a bull and heifer through the agency of our diplomatic representative at Vienna, General James Watson Webb, on seeing in the Patent Office Report of 1847 the following notice, founded on his personal observation, of

THE MURZTHAL CATTLE; BY C. L. FLEICHMAN.

Agreeable as the general impression must be which Swiss cattle at the Marienthal Dairy make upon the stranger, it is *nothing when compared to the sight* reserved here for the farmer of the fine stock of Murzthal cows. *This race combines nearly every one, if not every excellence:* abundance of milk, disposition for fattening, and great strength for draft; and is raised here in its highest perfection. The full blood of this race is characterized by the small-shaped head, with broad forehead, and broad mouth, short and fine horns, extended body, broad back, and handsome neck, high and slender tail of considerable length, fine bluish hair, big udder, and on the whole by the stately and soft entire appearance.

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* As we may often recur, for curious and historical facts in the Agriculture and Horticulture of our own country, to correspondence in times past with old officers of the Navy who have done more to advance those useful arts than many purse-proud landed nabobs on shore, it may be well once for all to explain, that in 1812, in the midst of the second war for Independence of England, (not yet fully established by a long shot,) the editor of this journal was induced at the repeated request of the Secretary of the Navy, acting under Mr. Madison, to accept the office of *Purser in the Navy*, which he continued to hold, with sometimes 1200 men on his pay roll, until a considerable time after he was appointed Postmaster of Baltimore, also by Mr. Madison. In the latter post he remained, being a second time unanimously confirmed by the Senate, under nomination from General Jackson, until removed by order of Mr Van Buren, who, however, professed to entertain "great respect" for the incumbent. Had the writer continued in the Navy, he would, now since the death of his life-long friend, Purser S. Hambleton, have been the senior Purser on the roll.

His official position, association, residence, and circumstances in Baltimore, brought him into constant and agreeable relations and correspondence with most of the old choice spirits of a gallant and a polished corps of gentlemen, not often equalled and never excelled in any public service—such as Rogers, Chauncey, Porter, Bainbridge, Gordon, Perry, Smith, Jones, Crane, Ridgley, not to speak of the senior officers still living, with the remembrance of their chivalrous deeds, in the grateful estimation of their country.

Far from hesitating to proclaim personal intimacy with, and attachment to such men, we are proud to have yet command of a record to note here again, what is so well corroborated by the pages of the first work ever dedicated in our country exclusively to the advancement of all that can give dignity if not profit to rural life and its pursuits—and to which no class of men contributed more or more freely than did then the officers of the Navy, in answer to the earnest call, in the old *American Farmer*, of their humble associate and friend the present Editor of the *Plough, the Loom, and the Anvil.*

We venture to identify this importation of Mr. Colt's with the Tuscany cattle brought by Commodore Bainbridge, from their sameness in color and general appearance, and will close this hasty sketch of the breed illustrated by the portrait of KOSSUTH, by the following extract from an old letter as far back as 1822, from that gallant and true-bred son of the "old blue hen," COMMODORE JACOB JONES of Delaware, whose intimacy and friendship it was our privilege to enjoy for the third of a century. He too was fond of Agriculture, and found in it a congenial theme for ready and agreeable conversation, having paid attention in various countries to the animals and implements employed in its operations.

His whole correspondence on these subjects would interest all intelligent readers, and especially those who knew the man, as it would display on the face of it many veins indicative of the philosophical turn of mind and spirit of research characteristic of the writer; but want of space restricts us to what he says about the effect of a cross of the blood of the Hungarian on the Spanish cattle, going to confirm our own persuasion, that this importation by Mr. Colt may prove one of great importance in all States where farmers possess, or may acquire, the sagacity to see how much is to be saved by the substitution of ox for horse power in the ordinary operations of husbandry.

Extract of a letter from Commodore Jacob Jones to J. S. Skinner, dated Gibraltar, 16th September, 1822.

The cattle that I have seen in Spain appear to be nothing superior to ours, nor have I seen any where on the coasts of the Mediterranean any thing that appears to be better than those in America, except a race of white cattle at Naples used for the draught. I was informed by a gentleman who, in supplying the government with timber, used thirty yoke of them for two years, that during that time they had constantly travelled from twenty to twenty-five miles a day;* the place from whence he drew the timber being from forty to fifty miles distant from Naples. He said they were the offspring of the Spanish bull and the *Hungarian* cow, or of the *Hungarian* bull and the Spanish cow. They are generally fifteen hands high, their bodies long, thin and deep, legs long, and small light head; a sharp muzzle resembling the deer; color entirely white, except a black nose, ears, and tuft of the tail.

Commodore Jones confirms in this letter, on the authority of Mr. Ladio, American Consul, and a practical agriculturist, the account received in Spain by Mr. Hambleton, that their best mules were the offspring between the horse and the jennett.

The reader will remember that Mr. H., in his letter republished in our last, speaks highly of the "*Tuscany cattle*," which he identifies with a breed of cattle on the eastern shore of Maryland, called "Bordley's breed." If we do not mistake, it is the race of cattle mentioned in Bordley's Husbandry as the *Tin-Yan* breed. They too, like those spoken of by Commodore Jones, were white, with black, but more frequently (and the more esteemed for it) *red* muzzle and *red* ears. From childhood they struck us as the latest and perhaps degenerate fruits of some old importation of extraordinary and valuable properties. We have seen calves of the breed frequently on the fine estate of John C. Weems, on West River, and often thought, were we farming, we would pick up some, apparently the deepest in the blood, with silky coat, *yellow* skin and *red* ears, and endeavor to breed back, and re-establish the origi-

* The Conestoga wagon-horses of Pennsylvania travel on the National Road from fourteen to sixteen miles a day.—*Ed. P., L. and A.*

nal imported stock, let that have been what it may. It was undoubtedly a family of aristocratic blood. The late WILLIAM GIBSON, of Baltimore, (for ever respected be his name for his spotless integrity and his love of Agriculture,) took one of his prizes at the Maryland Cattle Show for the best milch cow, with a noble animal of that breed—white, with silky coat, yellow skin, and red ears and muzzle; inheriting probably, however remotely, a lingering trace of the *Hungarian blood!*

It may be useful as an item of practical information to state, that Mr. Colt's imported Alderneys cost $160 without freight; his Ayrshires $190 with freight. He "is satisfied the Hungarian cattle will be valuable for beef and for the yoke, but not so satisfied about their milking qualities. In truth," he adds, "there is nothing like a pure Alderney for one that keeps but a single cow, and wants quality, not quantity. I do think, however, that my breed of Alderneys will yield at least 7 quarts a day for 335 days in the year; in fact you may milk them from calving to calving, but this is wrong—it does harm to the calf. I have crossed my pure Ayrshire imported cows by my fine pure-blooded Alderney bull, and my farmer says, with decided advantage in the increase of the milk,which is but little inferior in quality to the pure Alderneys. Of this I am entirely satisfied, that my calves of the Alderney and Ayrshire breed are equal to, nay, I think superior to my imported stock."

HOW PROTECTION BENEFITS THE PRODUCERS OF WOOL AND THE CONSUMERS OF WOOLLENS.

THIS is so well shown in the following article from the *New-York Dry Goods Reporter*, that we are induced to transfer it to our pages, and recommend it to the careful perusal of the grower of wool and the consumer of woollens, believing that both will find in it evidence that the true and only mode of reaching perfect Free Trade is by the establishment of adequate and perfect protection to the Farmers and Planters in their efforts to draw the Loom and the Anvil to the side of the Plough and the Harrow:—

It would be an interesting subject to inquire how protection to American industry has operated upon the consumers of this one article alone, [shawls,] but time and space forbid us to give more than a cursory glance. We will, however, state that previous to 1848, all the Woollen Shawls used in the United States were imported from Europe; the price of a fair article was $12 in first hands, $13 *a* $13 50 from jobbers, and $14 *a* $15 from retailers. The Bay State Mills were started, and it being a new business, the first year they could not afford shawls at less than the price of the imported article, but during the second year they had gained experience, and produced them at a cheaper rate. The price was reduced to $10; and experience having given them the ability to produce cheaper each year, the article has been reduced in price till now the same shawls are offered to the consumer at $8 each from retailers' hands. The successful introduction of this branch of manufacture induced others to embark in the same line, and as the foreign manufacturer was obliged to meet the market, the result already has been a saving to the consumer of 7-16 in the cost.

We are also gratified to state that this particular branch of manufacture has afforded a fair return to the mill-owners. We think we can with safety say the present production in the United States is quite 600,000, which, at an average of $5 each, amounts to $3,000,000, consuming at least 3,000,000 lbs. of *American Wool*, (when it can be had,) saving *us the export of near* $2,000,000 *specie to pay the balance of trade.* Is not this encouraging to the Wool-grower?

"EVERY LITTLE MAKES A MUCKLE," AS POOR RICHARD SAYS.

It is really wonderful to think, when we reflect on it, how large a portion of the produce of the farm is wasted in a country where, for want of due encouragement to manufactures, the consumer is widely separated from the producer.

The first waste committed is in clearing his land, and consuming *with fire* the *timber* that he could sell for money were the Manufacturer close at hand. From that, the *waste* extends to every thing; so that the offal, or "fifth quarter," lost to the isolated producer in the country, is worth more than the carcass when the consumer comes and settles close down by his side. Look at this story of the pig, (which we take from some paper of the day,) read and laughed at as a piece of badinage, yet full of suggestive thought and instruction to men who have learned to think. These men of Cincinnati would for the country Farmer take all the labor of slaughtering his hogs off his hands, and give him back all he gets out of them now, they being content with what the Farmer in the country now throws away! And again: The loss he incurs in the country by exposing his hogs in open pens to rain and snow, and mud and mire—the additional quantity of food which that system makes necessary, and the manure that is lost for want of proper compounding and management, are equal to *another fifth quarter;* so that where all are Farmers alike, with no conveniences for *using up the pig*, even to his bristles, hair, and blood, they may be said to lose one half. But then did not God made us Agriculturists to draw wood and water for the Manufacturers of England? Let us, then, continue to pay her with hand-made products what she manufactures for us by machine power, in the use of which one half-starved laborer can do one hundred times the work of a well-fed American freeman! For this, there is no alternative, unless we can *reduce our labor to the same level.* Ah, the glory, the incomprehensible glory of "Free Trade"!!!

THE PIG IN CINCINNATI.

What crocodiles were in Egypt, what cows are in Bengal, or storks in Holland pigs are in Cincinnati, with this trifling difference—their sacredness of character lasts but as long as their mortal coil; and this is abbreviated without ceremony, and from the most worldly motives. In life the pig is free—is honored: he ranges the streets; he reposes in thoroughfares; he walks between your horse's legs, or your own; he is every where respected; but let the thread of his existence be severed, and, shade of Mahomet! what a change! They think, in Cincinnati, of nothing but making the most of him. How many of this kind perish annually, to cement the vast prosperity of that city, cannot be told. About fifteen years ago, when it contained only one-fifth of its existing population, a few bold speculators began the trade. Selecting the hams and sides of the animal, they made pickled pork; of the rest they took small account. Soon, however, the idea occurred to one more acute than his fellow, that the heads and the feet—nay, even the spine and the vertebræ—might be turned to account. Trotters and cheeks had their partisans, and these parts looked up in the market. About this time the makers of sausages caught the inspiration; they found those luxuries saleable; and so many pigs were to be slaughtered, that the butchers were willing to do it for nothing; that is to say, for the perquisite of the entrails and offal alone. The next step was due to the genius of France. A Frenchman established a brush manufactory, and created a market for the bristles; but his ingenuity was outdone by one of his countrymen, who soon after arrived. This man was determined, it seems, to share the spoil; and, thinking nothing else left, collected the fine hair or wool, washed, dried, and curled it, and stuffed mattresses with it. But he was mistaken in thinking nothing else left. As but

little was done with the lard, they invented machines and squeezed oil out of it; the refuse they threw away. Mistaken men again! This refuse was the substance of stearine candles, and made a fortune to the discoverer of that secret. Lastly came one who could press chemistry into the service of mammon. He saw the blood of countless swine flowing through the gutters of the city; it was all that was of them, but it went to his heart to see it thrown away. He pondered long; and then, collecting the stream into reservoirs, made prussiate of potash from it by the ton. The pig was used up.

AN IMPORTANT DISCOVERY FOR AGRICULTURE.

It will bear to be repeated—what was said in our February number: "We traverse sea and land, and send to Africa and to South America, to bring home elements of fertility which at home we throw away."

In the *Boston Traveller* of last December, it was announced to "*The Society of Natural History*," that a valuable and extensive deposit of *mineral phosphate*, usually called phosphorite, had been discovered in the town of Hurdsville, Morris county, New-Jersey, by Doctor C. T. Jackson and Mr. Alger, while on an excursion into that State during the past summer.

The bed of mineral belongs, we understand, to Mr. Alger, who is taking measures to have it ground and properly prepared for application to American agriculture, in the history of which this accident may prove an incident to be remembered; and therefore we take pleasure in recording it. In England, where the various ingredients for restoring impoverished soils are, for obvious reasons, so much more eagerly sought, there is a great demand for this substance; and it happens in this case, as it did in the case of Peruvian Guano, of which we ourselves distributed two barrels twenty-six years ago in Maryland, and told the whole story of its composition and uses—it happens again, we say, in this case as in that, that several tons of this valuable deposit in New-Jersey have been *sent to England* upon trial as a cheap and practicable substitute for bones and guano. Intelligent farmers of that country allow nothing to be lost. They collect the fossil bones on account of the phosphate of lime contained in them; and even coprolites are employed when they contain only ten per cent. of phosphates. The best of the English phosphates, which are at present dug up in large quantities on the coast of Suffolk, afford only 60 per cent. of phosphate, the rest being carbonate of lime and earthy matter. The Peruvian Guano contains only about half its weight in phosphates, while the New-Jersey mineral, according to an analysis just made by Doctor Jackson, (than whom there can be no higher authority,) has 92 per cent. of it, besides about 7 per cent. of fluoride of calcium, valuable as the source of the fluoride contained in the teeth of animals.

So important is this substance deemed, says the *Boston Traveller*, that "a few years since the British Government sent commissioners to Estremadura in Spain, for the purpose of exporting it to England, and Professor Daubeny made a report on the subject, the result of which was that it did not occur in sufficient quantities; so that the only mineral phosphate now used by the agriculturists in England is obtained from the *crag* on the coast of Suffolk. But this is very impure," from admixture with carbonate of lime and infiltrated mineral matter, "while the mineral phosphate of New-Jersey is perfectly pure. Prepared bone dust, however, is very largely used in England, and in this country the demand for

it is considerable. This prepared bone contains several soluble phosphates besides lime, as magnesia and soda, all of which are important to the growth of plants. When we consider the bearing of phosphate of lime upon the animal and vegetable economy, and that our own bones and teeth are so largely composed of it and *derive it, as they only can*, from the vegetable kingdom, we see how important it is that the soil which is to afford us our food should be supplied with it as it is taken up by the growing plants. Farms often become valueless from the failing supply of phosphates, the crops fail, and the cattle raised upon them are of a less hardy class. The ashes of wheat, rye, corn, beans, turnips and potatoes, contains from 50 to 80 per cent. of various phosphates."

It is deemed proper here to add, in a spirit of watchfulness for every thing which it may benefit American Agriculturists to know, that we have just been reading a recent and elaborate PRIZE ESSAY on "THE FARMING OF SOMERSETSHIRE," England. These essays on the farming of various counties are truly magnificent papers in their way, generally accompanied with beautiful geological surveys, though many of them may contain matters not exactly applicable to our country.

In the one before us the author, as to *guano*, says:—

The better cultivation of root-crops has been much promoted by Mr. Michell's example and readiness to explain to his neighbors the reasons and to show the results of his practice. The gradual course of improvement, and the best mode of management to be now adopted, cannot be better told than in Mr. Michell's words:—

"Guano was for some years extensively used and with great success, so far as the turnip was concerned; but a more extended experience has convinced most farmers that their subsequent crops are not improved as they should be by the use of this manure; in fact, that the land appears to be impoverished rather than enriched after the growth of a good crop of turnips with guano, though they may be eaten off the ground; guano has consequently fallen greatly into disuse, and has given way to the less expensive and far more efficient dressing with superphosphate, of lime. This is generally manufactured by the farmer himself by dissolving crushed bones in about one third of their weight of sulphuric acid. This is used at the rate of from 2 to 4 bushels of bones per acre, carefully mixed with about ten bags of peat or wood ashes. The cost per acre—3 bushels of bones at 3s. per bushel, including carriage; 40 lbs. of acid, 1½d. per lb., and ten bags of ashes at 7d.: the whole 19s. 6d. per acre. With this such crops of turnips are now grown in the hill district as would quite astonish the farmer of a quarter of a century ago. And when we consider the little labor required in carting this manure on the farm and depositing it on the land, it must be acknowledged to be the cheapest as well as the best of all dressing for the turnip. It appears too to be exceedingly well adapted to the climate and soil, so that any breadth may now be grown at a reasonable cost."

On this very subject we find that at a late meeting of the Weekly Council of the Royal Society in England:—

The President made an interesting statement to the meeting on the subject of native phosphate of lime, and the probability of its occurrence among the metamorphic masses in this country. His Grace had been in communication with Sir Roderick Murchison and Professor Daubeny on this subject, which might prove one of great importance to the practical farmers of the United Kingdom, should the mineral phosphorite, containing as it did so large an amount of bone-earth, be either obtained from abroad at a moderate cost, or be found occurring in our own Islands. The council, at the suggestion of the President, directed the secretary to make such inquiries for the information of the members, in reference to this mineral, as might lead to farther researches for the discovery of its occurrence.

☞ It appears by a list of the average price of wheat in England and Wales for the last fifty years, it was never so low as during the last year, when the average was 40s. 4d., except the single year of 1835, when it

fell to 1s. per quarter below that; neither has flour *ever* been as low for forty years in Paris as during the last. What a beautiful system is this free trade in corn, so rapturously hailed by American free-traders!—a system that ruins the English farmer, and compels the American farmer to cheaper labor, or to live on *pumpernicle*—hard rye bread, like the Russian serf, against whom he is told he must learn to contend in the great grain markets of the world. Let us then call it the *pumpernicle policy!*

FLAX COTTON.

So much has been said lately in English and American papers, about a new process for preparing flax, achieving at once much saving of labor, and adapting that material to take the place of cotton, that we have deemed it best, notwithstanding the space it occupies, to place before the reader a full exposition of its claims, made by the inventor himself, before the Royal Agricultural Society of England.

Although we have strong doubts as to the efficacy of this process to accomplish the purposes in view, yet the commercial and statistical facts which are here presented, in their bearing on a great branch of Agriculture, are sufficient in our judgment to warrant, in the eyes of all enlightened readers, the space which we have yielded to them in this number; while the great sensibility evinced on the subject, both in this country and in Europe, shows how eagerly the public mind is turned to it, as a field open to improvements in agricultural machinery, calculated to have immense influence on the Industrial Interests of the world.

We feel bound to improve the occasion to warn our friends, cotton planters in the South, how impatient are English monopolists of their dependence on the great staple of the South—and how much it behooves them to provide beforehand, in our own market, a safe retreat from the storm that has been so long brewing.

Let them favor the restoration of the policy that tends to bring the spindle and the loom to their own cotton—that policy which increased the home market in five years from 260,000 to more than 600,000 bales; and they will soon render themselves independent of British merchants and manufacturers; who rejoice in every invention that tends to render them independent of the cotton-growers of the world, and find therein double cause of rejoicing, because they believe it must result in the destruction of the value of slave labor. Let them, on the contrary, continue to support the policy that drives all the cotton machinery of the world to the flax-growing regions of the world—that policy under which the domestic consumption of cotton diminishes from day to day—and they must become daily more and more dependent upon Manchester brokers and Manchester spinners; and then, when the day arrives—as there is danger it will too soon—when flax grown in England, Ireland, France, Germany, Poland, and Russia can be substituted for cotton in all the mills throughout Europe, they will bitterly regret a course of policy the whole effect of which has been, and is, that of ruining their friends, and strengthening their enemies. Pennsylvania stands by the South, and by the Union; and she is being ruined by the South. Manchester seeks to destroy the South, and the *South furnishes her the capital with which to accomplish her*

object! How long before the people of this Union, rising above party prejudice, will with one voice say with Mr. Jefferson—It is time for us "to place the manufacturer by the side of the Agriculturist?"

Royal Agricultural Society of England.

At the Weekly Council of the Society, held on Wednesday, Feb. 12th, Mr. M'Dermott read the following paper:—

REASONS IN FAVOR OF AN EXTENDED CULTIVATION OF FLAX AND HEMP IN THE UNITED KINGDOM.

My object, gentlemen, in reading the present paper, at the request of your esteemed Chairman, is to submit to you, and through you, to the great agricultural body of England, a few facts bearing on the importance and advantage which, in a national and individual point of view, would result from a more extensive cultivation of fibrous plants in this country. In venturing humbly to submit these facts and opinions to so important and influential a body of gentlemen as those who compose the Council of the Royal Agricultural Society, I am far from wishing it to be understood either that I conceive them to be ignorant of many of the facts which I shall have occasion to adduce, or that the subject of flax culture is one to which they have not already paid some considerable attention. On the contrary, many of the valuable reports of your Society, and the prizes given for Essays on the subject, prove that it has at various times engrossed your consideration, and formed the theme of serious deliberation at your Councils. Markets comparatively undeveloped, ignorance of the true character and structure of the plant, prevalance of modes of cultivation and preparation of the fibre, wasteful and injurious in themselves, and attended with an enormous amount of risk and trouble to the grower, have hitherto each had their weight in inducing your Society to withhold its valuable recommendation in favor of an extension of flax culture.

The progress of science, and the skill and enterprise displayed by many of the agriculturists of England and of Ireland, have, however, now placed the matter upon a perfectly different footing, and upon one which I venture to submit should induce the Royal Agricultural Society, in the most strenuous manner, to urge upon the farmers of the United Kingdom the propriety of immediately devoting some portion of their land to the cultivation of flax.

Climate and Soil of England suited to its Growth.—That flax *can* be produced in this country is a point upon which I apprehend little doubt now exists; and it is unnecessary for me, especially before such a body as that which I have now the honor of addressing, to argue such a question. Suffice it, therefore, upon this point, to say, that in many respects our climate is better adapted for its growth than even Belgium, inasmuch as we are not subject to those severe droughts which, occurring in the spring, in that country, frequently inflict very serious damage upon the young crop. Flax is grown, to some extent, in almost every part of the United Kingdom—it has been grown with success upon an Irish bog, and in the fen districts of England—on the summit of the Wicklow mountains, and upon the Beaconhill of Norfolk, in the midland counties of England and the western shores of Galway and Mayo, upon rich and poor, clayey, gravelly, alluvial, and every variety of soil.

Importance attached to Growth of Flax by Governments.—This suitability of our climate and soil to the production of flax, and the importance which in earlier times was attached to it, is sufficiently evidenced by the numerous legislative measures which at various times, from the reign of Henry VIII. to that of George III., have been passed in order to promote and encourage its growth. The "Transactions of the Board of Agriculture" for 1742, contain a letter, written by Robert Somerville, Esq., of the East Lothians, in which the writer regrets, notwithstanding these encouragements and the bounties offered by the liberality of the Government, that the cultivation of flax should then have been so extremely limited, and the management in every stage, both of its culture and manufacture, so very defective.

"This," he says, "is the more to be regretted, as there can be little doubt that immense quantities might be raised in Britain with little labor, and that, too, upon soils where hardly any thing else will grow. The accomplishment of an object so

truly desirable as that of the extended cultivation of flax, would be attended with the most salutary effects, by affording employment for an increased population, and materially lessening *our dependence upon foreign countries*."

But if, upwards of a century since, great importance was attached to this subject, on the ground of *increased population and dependence on foreign countries*, of how much greater importance and advantage ought it not to be considered at a time when our population is more than doubled, and our *consumption of cattle food*, formed from flax seed, and of raw material for our manufactures, has increased to an extent which, a *century* since, would have been considered fabulous and incredible; and at a time, too, when our railways and improved means of transit give such increased facilities to the grower for the disposal of his produce.

Markets.—In urging upon the agriculturists of England the propriety of an extended cultivation of flax, I am anxious first to show them the enormous extent of the *existing markets* for their produce, which is now almost exclusively engrossed by the foreign producer; and the vast demand which is now opening up, in consequence of the recent discovery by which flax may be employed in our silk, woollen, and cotton manufactures; and which, if not speedily secured by our home producer, must, in like manner, be supplied by the foreign grower. The markets which at *present* exist for flax are twofold in their character—agricultural and manufacturing. Under the former are comprised those large quantities of oil-cake and of flax seed for sowing and crushing purposes, which are annually consumed in this country.

Oil-cake.—Upwards of 70,000 tons of oil-cake are annually imported, the value of which exceeds £500,000. the whole of which might be produced by our agriculturists with the most perfect ease, and with profit and advantage to themselves. In connection with our supply of foreign oil-cake, it is worthy of remark, that by far the larger proportions are sent from those countries which are the largest exporters of cattle to this country. By the almost total neglect of the cultivation of flax our farmers are thus placed in the anomalous position of *dependence upon those countries* for the supply of food for their cattle, which compete with them in our markets, and in several instances we are actually compelled, in addition to the price set upon the cake, to pay a considerable duty imposed by the Government of the exporting countries.

Flax-seed for Crushing.—From *Russia* we import annually half a million of quarters of flax-seed, the value of which is upwards of a million sterling. Our total imports of flax-seed for sowing and crushing, from all countries, in round numbers, are about 650,000 quarters, the value of which, at the low price of 7*s.* per bushel, is £1,820,000. There is no reason whatever why this large sum might not be annually saved to the pockets of our agriculturists, nor why the makers of linseed oil should not be supplied exclusively with home-grown seed for the purposes of their manufacture. The cultivation of flax at home, *if only for the seed*, would render our oil-pressers independent for their supply upon foreign countries, and would give to our agriculturists a return of upwards of £2,000,000 annually. It would also give them an article more valuable for cattle-food than the oil-cake purchased from foreign countries, and which consists of the mere refuse and husks which remain after the expression of the oleaginous properties from the seed; or if it should be preferred by some still to use cake, the seed could be sold to the "oil-presser," and the grower might fatten his cattle upon cake produced from home-grown instead of from foreign linseed.

Sowing Seed.—With an increased cultivation of flax at home, we should also be spared the dependence upon foreign countries for our supply of seed for sowing purposes, and which we now import to the value of some £200,000 per annum; for it is absurd to suppose that flax can only be grown in this country from foreign seed; the reason for this opinion being no doubt traceable to the prevalent mode of pulling the flax before fully ripe.

Manufactures.—Passing on, however, from the agricultural demand which exists for the production of the crop in the shape of *seed*, I will now call your attention to the existing market and the sources of supply for the *fibre* of the plant required in our manufactures. It cannot fail to be a matter of deep regret to every well-wisher of his country, that in the two main branches of our textile manufactures we are so completely dependent for the supply of the raw material upon foreign countries. Our cotton manufactures absorb *daily one thousand tons* of cotton wool, the produce of foreign countries alone. For our supply of cotton, we must, no doubt, still continue to be dependent upon foreign countries, inasmuch as the material cannot be produced *at home;* but there is every reason to believe that by the adaptation of flax to cotton machinery this extent of dependence will in future be consider-

ably less than it has hitherto been, provided our agriculturists will but come forward in earnest, and endeavor to supply the new demand for their produce thus created. Our linen and other manufactures in which flax is employed are all but completely dependent upon foreign countries for their supply; and of the 100,000 tons now annually consumed, not more than one-fourth is produced in this country. The total value of the flax fibre imported for manufacturing into linen, sail cloths, tarpaulings, rick covers, sacking, and other materials, exceeds £5,000,000 annually; and there is no doubt, judging from the rapid progress of our linen manufactures, that if the supply of the raw material could be more readily obtained at home, the consumption would be increased to a still greater extent. The progress of the linen trade, in consequence of the great improvements which have been made in machinery, has within the last 20 years been almost unparalleled. The exports of linen have increased since that time from 50,000,000 to 105,000,000 of yards, and its declared value from £1,700,000 to upwards of £3,000,000. No attempt whatever has been made on the part of our agriculturists to meet this enormous and rapid increase in the demand for the raw material; and as a consequence, the foreign producer has been reaping a golden harvest from the monopoly which he has possessed. The imports of foreign flax have increased from 936,000 cwts. in 1831 to 1,800,000 cwts. in 1842. The value of the *increased* imports being not less than *two millions and ahalf*, nearly the whole of which is paid for in money sent out of the country.

Hemp.—We also import large quantities of hemp, which might, like flax, be easily and profitably grown at home. The value of the hemp annually imported is above £1,500,000. We have thus a demand existing for flax and hemp, and for the supply of which we are dependent upon foreign countries, shown in round numbers by the following figures:—

Flax fibre	£5,000,000
Seed for crushing	1,800,000
——— sowing	200,000
——— Oil-cake	600,000
——— Hemp	1,500,000
	£9,100,000

New Markets.—Hitherto I have spoken only of the *existing markets:* I am now anxious to call your attention to that great demand which will be opened up by my discovery of the mode of adapting flax to cotton and woollen machinery. The substitution of flax for cotton is now no longer a matter of doubt. Recent experiments at Rochdale have completely set that question at rest. Important as may be the considerations connected at present with the linen manufactures, and cogent as may be the arguments deduced from them, in order to induce you to obtain possession of the ground now occupied by the foreign producer—infinitely more important, and far more forcible, are those which may be drawn from the prospective demand now springing up in our cotton manufactures. The consumption of the raw material must of necessity be governed by the machinery which exists for its manufacture, and the spindles of Belfast, of Dundee, and of Leeds, are already supplied with the produce of foreign countries. Not so, however, with respect to flax and its adaptation to the cotton manufactures. Millions of cotton spindles are ready at once to take to the new material and spin it for you, without the slightest alteration being required in their arrangement. A thousand tons of cotton daily, or 770,000,000 of lbs. annually, are consumed in our cotton manufactures, and the result of my recent experiments has been such as to show that flax may be substituted for one half at least of this amount. In order, therefore, to supply the *new demand* for a *new material* thus created, the produce of 2,000 acres will be required for each day, and the whole of the flax grown in the United Kingdom does not amount to more than one seventh of the supply required for Manchester alone. It is a duty imperative upon the agriculturists of the country to endeavor to meet this enormous demand, and not to allow it to pass into the hands of foreign countries, which will inevitably be the case if they do not immediately exert themselves in this respect.

Wool.—But not Manchester alone, but the woollen districts of England, await with anxiety an increased supply of flax which shall be available for the purpose of spinning in combination with wool, upon the existing wool machinery. I will not trouble you with statistics upon the subject of our woollen manufactures. The population of Leeds, Bradford, and other towns in the woollen districts, are kept in

a state of prosperity by the employment which it affords; and the introduction of flax into that particular branch of our manufactures would have the effect of reducing the price of the material by 25 per cent., and of giving an increased amount of employment in those districts. A firm in Bradford has already taken steps to carry on the manufacture, and will alone require the produce of 5,000 acres in the ensuing year.

Deficient Supply of Cotton.—In connection with the supply of the markets already referred to, a further argument is to be found in the effect of the present diminished supply of the raw material from foreign countries. "There is," says Mr. Porter, in his remarks on the statistics of the cotton trade, in a paper read before the British Association last year, "a growing opinion that now, and for some years past, we have reached the maximum supply of cotton from the United States—a fact which, should it prove to be correct, makes it a matter of absolute necessity either to seek for further supplies of the article from other sources, or to find some efficient substitute that shall provide the means of employment for our continually growing numbers." So great has been the deficiency of cotton in the United States during the past year, that the prices have risen cent. per cent. as compared with those of 1849, and our manufacturers are straining every nerve to endeavor to obtain an additional supply of cotton, and to reduce their dependence upon the United States for the supply of their staple article. The Manchester Chamber of Commerce, feeling the importance of the subject, have, at considerable expense, sent a gentleman to India for the purpose of obtaining information as to the probable extent to which they might depend upon that country for an increased supply of cotton. But to realize this much desired benefit, there must be introduced into India a totally new system of managing this crop, and new and convenient modes of transit for bringing the produce of the interior down to the coast for shipment. Those acquainted with the habits and prejudices of the people of that country need hardly to be told with what difficulty such a change would be brought about, and how many years must elapse before the establishment of railways, or the formation of roads for the conveyance of the material produced under such an altered system. So far, then, as the arguments for an extended growth of flax in this country, founded upon the present position of our cotton manufactures, are concerned, our agriculturists have to consider the diminished supply and increased price of cotton; the difficulty of obtaining the requisite supplies from other countries; and, above all, the fact that flax can be advantageously employed as a substitute in those manufactures in which cotton is required.

Deficiency of Flax.—If again we turn to the position of our linen manufactures, it will be found that there exists in that branch also a most extraordinary deficiency in the supply of the raw material. In Ireland the cultivation of flax has fallen off during the past year, as compared with 1845, by nearly 60,000 acres. In Russia, from whence we derive our largest supplies, there has been a decrease in the amount of exports of flax of nearly 150,000 "poods," or about twenty per cent.; and I find in the *Morning Chronicle*, which has devoted much attention to the subject of an extension of the growth of flax, a circular of one of the largest houses in St. Petersburg, in which the following statement occurs:—

"We are to have a small supply of flax next season, *not above one half* of that which we had two years ago, and such high prices are consequently paying in the interior, that the dealers will not be able to lay it down here, to cost less aboard than it is now selling for on your side; so that we are not likely to have any thing doing on contract for a long time, if at all this winter, unless the relative state of the two markets experience mutual alteration by an improvement on your side."

In Belgium, where the finest qualities of flax are produced, the cultivation of flax is considerably less than on the average of former years.

It is under these circumstances, with an increasing demand on the part of the manufacturers, and a diminished supply on the part of the foreign producer, that I venture to submit to the British agriculturist the taking some steps calculated to meet the existing state of things, to diminish our dependence upon foreign countries, and by so doing confer lasting benefits both upon himself and upon his country. There is a happy conjuncture with this state of things and the time at which the present demand arises. Formerly, when our laws imposed restrictions upon the importation of grain for human food, our agriculturists might have conceived that there existed some kind of moral impediment in the way of increasing our home growth of articles for any purpose not of equal primary necessity. That impediment, whether rightly or wrongly I pronounce no opinion, has, however, passed away, and

there is now no reason whatever why their fields should not henceforth be used for the production of any article that promises an adequate profit to the grower.

"It is," says Mr. Porter, of the Board of Trade, "especially desirable so to apply the productive power of the soil for the supply of articles *as indispensable* to the support of millions of our people as corn itself; and an *additional inducement* to the growth of flax, beyond that offered by other articles, may be found in the fact that, to bring it to the same condition as that in which it is imported from foreign countries, calls for the employment of a considerable amount of human labor."

Objections to Growth of Flax: Agriculture.—But, if satisfied that ample markets exist for the sale of his produce, and that this sort of moral impediment to its growth has been removed, the agriculturist may still point to the objections entertained against the growth of flax, both on account of its supposed exhaustive character, and the trouble, risk, and expense attendant upon its preparation for markets, as reasons why he should not enter upon the cultivation of the plant. With respect to the exhaustive character of the plant, and its consequent injurious effects upon the soil, there appears to be no reason for supposing that, under a proper and judicious mode of treatment, it is more exhaustive or injurious than any other seed-producing crop. An examination of the stem of the plant shows that those portions of it which are required for the purpose of manufacture, are derived almost exclusively from the atmosphere. Indeed, to so small an extent do the inorganic properties of the soil enter into the fibre, that it has been found upon analysis that 100 lbs. does not contain upon an average more than 2 lbs. of mineral matters, including lime, magnesia, oxide of iron, carbonic, phosphoric, sulphuric acid, and silica. It is the woody parts of the plant, the resinous matter of the seed, with its capsules and husks, which absorb from the soil the phosphoric acid and other fertilizing ingredients. If the flax, unlike other crops, be not allowed to return any thing to the soil; if the seed be thrown into the steep pit or "rettery" with the stem of the plant, and there destroyed; if instead of being employed as food for cattle, the straw or woody parts be rendered perfectly useless for all the purposes of manure, or mixing with cattle food, then undoubtedly flax, like every other crop, would be *in itself* an exhausting crop. But practical experience, however, has fully proved that under a judicious mode of treatment, so far from being an exhaustive, flax is actually a renovating crop. Numerous instances might be cited upon this subject. Mr. Edmonds, of Stonehouse, near Plymouth, stated, in 1843, "It is a mistaken opinion that hemp and flax impoverish the land; from *long experience* I have found the contrary; these are crops that make a *greater return as to manure than any corn crop.*"

Sir Richard O'Donnell, who is one of the largest cultivators of flax in Ireland, and who has grown to the extent of 700 acres in one year, states in the *Morning Chronicle*, "As the result of many years' experience, that when grown in its regular rotation, flax is so far from being exhaustive, that it tends greatly to improve the soil and the character of the other crops in the rotation. It is above all most valuable for laying down land after wheat or oats, as the process of pulling the flax, by loosening the earth around the roots, improves greatly the quality of the grass crop."

Mr. Warnes, whose exertions as a practical agriculturist, to promote the extension of flax culture, are deserving of all praise, and whose system of agriculture rests upon the growth of flax, and the fattening of cattle in boxes, upon the seed, incorporated with other produce of the farm, both summer and winter, has introduced the flax plant into every rotation upon his farm; and, judging from the results of his own experience, he states that no rational assertion can now be urged against the growth of flax, as the improved systems of cultivation and preparation have rendered obsolete the clauses in old leases, prohibiting the culture of the plant, and the antiquated notion that fibre and seed cannot be secured at the same time. So far, therefore, as the exhaustive character of the plant is concerned, there appears to be no sufficient ground for entertaining such an opinion.

Preparation for Market.—A further objection to the growth of flax, is, however, to be found in the nature of the process hitherto required to be employed previous to its preparation for the market. So long as it shall continue to be considered necessary for the grower to embark in the present troublesome and uncertain process of steeping the flax in the straw, it will be in vain to expect any very general or extensive growth of the plant. Although considerable advance has no doubt been made in the preparation of the fibre during the last few years, still the present mode is far from being suitable to the great body of the farmers of the United Kingdom.

Dew Rotting.—Under the system of preparing the flax, hitherto four modes of steeping or rotting the plant are resorted to. The first consists of the plan of "dew rotting," or allowing the flax to remain exposed on grass land for a considerable number of days, exposed to the action of the rain, dews, and atmosphere. The plan, however, is one which, from its obvious inconveniences, is not calculated to meet with general approval in the present advanced state of agriculture, and is indeed very rarely adopted.

Steeping in Streams.—Probably the best mode of steeping the flax is that of placing it in running streams, according to the mode adopted in Courtrai, the principal flax-producing district of Belgium. The flax so prepared generally realizes a much higher price than any other description of flax. There are, however, certain peculiarities in the water of the river Lys which make it admirably adapted for steeping purposes, and which are not possessed by any other streams in this country. Independent of the peculiarities of the water, the steeping of flax in running streams cannot be made generably available in this country, as they are mostly too rapid in their character.

Steeping in Pits.—In the absence of suitable streams, recourse is had to a mode of steeping in pits or pools sunk in the ground. But so many favorable conditions are required to be obtained, and so many unfavorable ones to be avoided, in the selection of the site for the pool, and the supply of the water required, that it is probable that a desirable or perfect steep-pool could not be found in any part of the country. The soil forming the bottom and sides of the pit will have an influence on the color of the fibre; clay, gravel, alluvial and peaty soil, will each impart some peculiar dye to the material, which more or less affects its value. The water used in the pit or pool must not be spring water, and it must not have flowed over any soil containing metallic deposits; and rain water is not well calculated for the purpose. But, in addition to all these difficulties attendant upon obtaining the requisite means, the grower of flax has to contend against all the uncertainties and risks of either over or under-steeping his flax. "One sultry night," says one of the reports of the Royal Flax Society, "while it is in the steep, and nearly rotted sufficiently, is enough to carry the fermentation beyond the safe point. So much is this feared by farmers, that almost all flax is underwatered; and although much of it is afterwards mannered on the grass, yet the great proportion is brought to market with the shores still unseparated in bits on the fibres." But while the sultry nights of summer are unfavorable to the steeping of flax, and inconvenient to the farmer, inasmuch as his laborers are at that season generally otherwise employed, it is also obvious that during the winter, when comparatively little farm labor is carried on, the process of steeping must be discontinued altogether, in consequence of the temperature.

Schenck System.—A fourth process has, within the last few years, been very strenuously advocated by the Royal Flax Society in Ireland, which consists in steeping the flax in hot water. This mode, although doubtless an improvement upon any of the existing plans, still does not afford the means of obtaining that complete separation of the fibres which it is desirable to obtain. The Belfast Society do not pretend that this is a mode generally applicable to the use of the producer of flax, for under what they term a "division of labor" they propose that the whole process of preparation, with the profits attendant upon it, and the additional labor required, shall be taken out of the hands of the growers, whom it designates as "a class of persons ignorant of the commonest chemical principles," and handed over to capitalists or speculators who would erect the required machinery in districts where the growth of a certain quantity of flax would be previously guaranteed. According to the reports of the Society, it appears that the profits upon the preparation of an Irish acre of flax would be something like 200 per cent. upon the amount paid to the grower for his produce. The farmer is paid for his flax a price ranging from £5 to £8 per acre; the steeper, upon this principle of "division of labor," receiving a net profit (I take the figures of the advocates of the plan) of upwards of £20.

With such *inducements* as these offered by the Flax Society, I doubt much whether the agriculturists of this country will feel very much disposed to enter upon the growth of flax to the extent which the circumstances of the case require; and in Ireland I have no doubt but that the whole scheme, fraught with so many of the abuses of the middlemen system, will soon be found alike intolerable to producer and consumer.

The whole of these difficulties may, I believe, be easily overcome by the adoption of a system more in accordance with the present advanced state of practical

science and knowledge, and which involves *the entire abolition* of the whole of the existing modes of steeping the flax in the straw.

Steeping Injurious.—Not only is the present process of steeping inconvenient and unnecessary, but it is highly injurious, as it imparts its injurious dyes to the fibre, deteriorates, and gives to it an inequality of strength, which, in the subsequent stages of manufacture, are exceedingly difficult to be overcome. I have found this to be more particularly the case in the preparation of the flax into a material capable of being spun alone or in combination with wool and cotton upon the existing machinery. I am anxious that the grower should not resort to any of the existing modes in the preparation of his flax; for any one step taken in that direction entails subsequently the necessity of much additional trouble and expense in addition to most materially affecting the strength and quality of the yarns and thread produced from it.

Purchase in the Straw.—The mode in which I should most prefer to purchase the flax would be in the straw, precisely as it is left after the removal of the seed. In this state it can be dealt with with a far greater degree of certainty than in any other, and may be, within four-and-twenty hours from the time of its being pulled ripe from the field, placed in a condition fit for preparation for spinning upon any of the flax, cotton, wool, or silk machinery of the country.

Facility of Transit.—As there would be obviously many inconveniences connected with the transit and carriage to a large distance of a material so bulky as that of flax in the straw, the grower might in certain cases, by the use of a common breaker and a pair of toothed cylinders, remove a great portion of the more bulky part of the plant, and thus send the fibre in a partially-cleaned state to the market. The chaff obtained from this partial separation of the straw from the fibre, which contains a very large proportion of the inorganic matter from the soil, and which not having been destroyed by the process of steeping, will form a most valuable material for mixing with cake, crushed seed, the mucilage formed from it, or other articles of cattle-food.

Further Process.—I am anxious, however, to see the growers of flax deriving the full amount of benefit which is to be obtained from the complete preparation of the material into a substance suitable at once for the markets of Belfast, Dundee, Manchester, and the woolen districts. I am aware that in the hands of indidividual growers the process, although not a complicated one, but which still requires some larger amount of acquaintance with the *higher* branches of chemistry than generally exists among the agricultural classes, must not be considered as generally available. I believe, however, that a plan might be very easily devised by which the flax-grower might secure for himself these benefits, which, according to the recommendation of the Royal Flax Society, are to be exclusively engrossed by speculators and capitalists. Indeed several applications have already been made by parties requesting me to grant them monopolies under my patent, for the perfection of flax, within an area of a certain number of miles in various parts of the country. I believe that such a course is one eminently calculated to rob the grower of his legitimate profits, and to retard that extension of the growth of flax which I conceive to be indispensably necessary for the welfare of the country. Within the last few days, I have been informed of a case in which a gentleman in Ireland has for several years grown flax to a very great extent in one of the districts in which a monopoly is possessed by "a steeper," under the patent system. Possessed of this monopoly over a large tract of country, such an individual has the whole of the growers entirely at his mercy, and can offer them whatever sum he pleases for their produce, knowing full well that no other available market exists for many miles. Indeed, to such an extent has this system of extortion been practised, that many of the growers have been compelled, after keeping the flax in stack for the last two or three years, to sell for 30s. per ton that for which he would have received, but for this monopoly, from £3 to £4. The gentleman to whom I have referred has now about 700 tons of flax in stack, which he will not sell at the ruinous price offered by the "steeper," and further states that he will not sow a single acre of flax in the present year, unless some fresh mode of disposing of his produce is created.

Joint Stock Associations.—The mode in which I would venture to suggest this system may be prevented, and the growers be enabled to derive the full benefit of the perfection of the flax, would be by the establishment in different localities throughout the country, by means of joint subscriptions among the flax growers in such district, at which the preparation of the material could be carried on, and the profits derived from the process distributed at stated periods among the shareholders in proportion to the amount of shares or interest which they held in the

undertaking. This system is one which has been found to work well among the cultivators of the sugar-cane in the West Indies; and there is no doubt but that it would work equally well among the producers of flax in this country.

Local Societies.—A second mode by which this object could be attained, would be by the erection of suitable premises and apparatus by each of the various local agricultural associations or farmers' clubs in the country, the buildings and patent being the property of the club or association, and the use of them being allowed to members or subscribers, upon payment of such sums per ton or per acre as might be agreed upon by the parties.

Landlords.—There is also a third mode which might be made available in the case of the failure of either of the preceding plans, which is, that of the erection of the required accommodation by the landlords for the use of their tenants, upon the payment of such sums as would be calculated to cover the interest of the capital invested, and the cost of keeping the buildings and apparatus in an efficient state of repair.

Profit.—There remains yet one very important point, to which I have at present only incidentally alluded—I mean the profit to the farmer upon the cultivation of flax. If I have succeeded in convincing you of the extent and certainty of the market which exists for the produce, and of the absolute necessity which exists for your endeavoring to obtain possession of those markets, I have no doubt that I shall be enabled most satisfactorily to prove that you can do so with considerable profit and advantage to yourselves.

Seed and Fibre.—It will be found in the first place that the profit derived from flax under the present modes of steeping, combined with the saving of the seed, is considerably greater than can be obtained from the cultivation of *wheat*, at present prices. Mr. Warnes states that the profit upon fourteen acres of flax, grown and prepared by him last year, was upwards of £6 per acre over that of his wheat. His figures are—

	£	s.	d.
Prepared Flax sold at Leeds,	238	16	0
Value of seed,	126	0	0
	364	16	0
Deduct cost of preparing Flax,	140	0	0
Gross profit,	224	16	0
Value of produce of 14 acres of Wheat, at 38 bushels to the acre, at 40s. per quarter,	133	0	0
Total balance in favor of Flax over Wheat, not including 6 tons 6 cwt. of husks equal to hay, 26 cwt. of tow, and many loads of refuse for littering cattle,	£91	16	0

Seed alone.—The above is an instance in which both the seed and the fibre were saved and prepared. There are cases, however, in which the flax is grown solely for the purpose of seed, and others in which the seed is wasted or destroyed, the only object in such case being to obtain the fibre. In either case there is a greater profit to the grower than can be obtained from almost any other crop. Mr. Beare, probably one of the best farmers in the county of Norfolk, grows every year one or two acres of flax after wheat, and without manure, for the seed only. His crop last year yielded 26 bushels, which, at 10s. per bushel, would be worth £13; while his wheat crop did not exceed five quarters, which, sold at 40s., would yield but £10, leaving a profit in favor of flax seed alone (the straw being used as litter for cattle) of £3 per acre. I may state upon this point, as a general rule, under the present system, that, when grown for its seed alone, the flax fibre is coarse, and is not considered of so much value as that of a finer description.

Fibre alone—Seed destroyed.—Numerous instances might be adduced, from the reports of the Royal Flax Society, to show that even in cases where the seed has been thrown into the steep pits and destroyed, the profit upon the sale and preparation of the fibre was still greater than that of many other of the crops. As the example thus set is one, however, which is not likely to be generally followed by enlightened agriculturists in this country, it is unnecessary for me to trouble you with any figures upon that point.

New Process.—These, however, are returns obtained under the *present mode* of

steeping and preparing the flax. According to the plan which I venture to submit, the returns will, I anticipate, be even MORE favorable to the grower.

SOLD IN STRAW.—In the case in which he may elect to dispose of his *flax in the straw*, the farmer would derive the full value of his crop of seed, and the straw would be worth to him £4 per ton, the produce being about two tons per acre. He will not be required, as is the case at present, to pull his flax before it is perfectly ripe, or before the seed has been fully and completely formed. Indeed the *coarser and more developed* is the stem of the plant, the more valuable will it be for the purpose of adaptation to the woollen and cotton machinery, and the fine gossamer threads can be produced from it with greater certainty and precision than when pulled in an earlier stage of its growth. The grower, therefore, need be under no fear as to the fineness of his crop, and he may obtain from it as large an amount of seed as his land will produce.

PARTIAL CLEANING.—If the difficulty of transporting the flax in the straw to any great distance should render it necessary for the grower to reduce its bulk, by the removal of some of the woody part of the plant, he will obtain by so doing, in addition to the seed, a valuable article of food for his cattle, and the enhanced value of the fibre will more than repay the amount of labor bestowed upon it.

COMPLETE PREPARATION.—If disposed to carry the preparation of the flax to its usual stage of adaptation to the spindles of the manufacturer, whether cotton, linen, wool, or silk, he will derive a profit larger and more certain than any which he can obtain under the present process; while, from the refuse straw impregnated with the salts used in its preparation, he will obtain a manure of the richest and most fertilizing character.

SOCIAL ADVANTAGES.—One word upon the social advantages which must result from an extended cultivation of flax, and my remarks (already, I fear, too protracted) will have been brought to a close. Upon this point, I cannot do better than quote a few words from the report of one of the special correspondents of the *Morning Chronicle* who visited the small village of Trimingham, where Mr. Warnes has for several years most sedulously and successfully devoted himself to the cultivation and preparation of the plant.

"The condition of the inhabitants of the village," he says, "was a few years since most deplorable, and the amount of pauperism exceeded that of the adjoining parishes. Since the introduction of flax culture, this state of things has passed away. There is not a pauper in the parish; the poor-rates are nominal; there is not one able-bodied laborer, nor any portion of his family, who may not obtain constant employment throughout the whole of the year, and the moral and social state of the village will bear comparison with most. If the growth of flax can produce results required similar to those which I have witnessed at Trimingham, there can be no doubt that the sooner it is cultivated to a greater extent in this country, the sooner will the enormous burden of pauperism decrease; and happiness and contentment be more generally diffused among the large masses of our laboring population."

The Chevalier CLAUSSEN then laid before the Council the following different specimens:—

1. Samples of flax in the straw, pulled and rippled.
2. Sample of flax-straw, prepared according to the new process, adapted for linen manufactures.
3. Sample of long fibre scutched from part of No. 2.
4. Samples of flax-fibre, adapted for spinning on cotton machinery.
5. Sample of yarn spun on cotton machinery, some from all the above flax fibre, others mixed in various proportions with the American cotton; these mixtures being termed by the inventor flax-cotton.
6. Samples of flax-fibre prepared for mixing with wool.
7. Samples of yarn produced on ordinary woollen machinery, composed of wool and flax in various proportions, termed by the inventor flax-wool.
8. Samples of flannel woven from the above.
9. Samples of fine cloth woven from yarn composed of flax and fine wool in various proportions.
10. Flax-fibre prepared for mixing with silk, and dyed of various colors.
11. Flax-fibre mixed with spun silk, and termed by the inventor flax-silk.
12. A sample of yarn produced from the above.
13. Samples of flax-cotton yarn dyed of various colors.
14. Samples of cloth woven from flax-cotton yarn and wool, dyed.

The following are the advantages detailed by the Chevalier Claussen and his friends, as possessed by the new process over the old methods:—

1. That by the Chevalier Claussen's process the preparation of long fibre for scutching is effected in less than one day, and he always produces a fibre uniform in strength and entirely free from color, much facilitating the after process of bleaching either in yarns or in cloth.

2. That he can also bleach it in the straw at very little additional expense of time or money.

3. That the former tedious and uncertain modes of steeping are superseded by one perfectly certain with ordinary care.

4. That in consequence of a more complete severance of the fibres from each other, and also from the bark and boon, the process of scutching is effected with half the labor usually employed.

[These advantages referred to that portion of the invention that includes the preparation of flax for spinning upon the ordinary flax machinery, and suited to existing markets. The further advantages have reference to the creation of new markets for British produce.]

5. That by the new process flax is rendered capable of being spun, either in whole or in part, on any existing spinning machinery.

6. That the fibre, to be mixed with cotton, or spun alone on cotton machinery, is so completely assimilated in its character to that of cotton, that it is capable of receiving the same rich opaque color that characterizes all dyed cotton; and, consequently, any cloth made from flax-cotton yarn can be readily printed, dyed, or bleached by the ordinary cotton processes.

7. That flax-fibre can be always produced with profit to the British grower at a less price than cotton can be imported into this country with profit to the foreign producer.

8. That as a consequence of this advantage, the manufacturers of this country will be less dependent on the fluctuations of the cotton crop for a supply of the raw material, and a more regular employment will be given to the manufacturing population, and the present amount of local rates be greatly diminished thereby.

9. That the British grower will derive great benefit from a supply of the wide demand thus opened to him.

10. That with respect to the advantages of being able to spin flax in combination with wool on the existing woollen machinery, the first is, that the flax prepared by M. Claussen is capable of being scribbled, spun, woven, and milled, in all respects as if it were entirely wool; having an advantage in this respect over cotton, which has not the slightest milling properties; on the contrary, the flax-fibre is capable of being even made into common felt hats, with or without an admixture of wool. To such an extent have the milling properties of flax been proved, that the sample of cloth exhibited had been woven to 54 inches wide, and milled up to 28 inches wide.

11. That the flax-fibre will not, under any circumstances, when prepared for spinning with wool, cost more than from 6*d.* to 8*d.* per lb., while the wool with which it may be mixed will cost from 2*s.* to 4*s.* per lb.; consequently reducing the price of cloth produced from this mixture 25 or 30 per cent. below the present prices of cloth made wholly from wool, and being of equal, if not greater durability.

12. That short-wool refuse, which cannot by itself be spun into a thread, may, by being mixed with this thread, be readily spun and manufactured into serviceable cloths.

13. That there is a probability of a further demand being opened up for this fibre in the flannel and woollen trade.

14. That by this process flax may be also so prepared as to be spun in any certain proportions with silk upon the existing silk machinery; that when so spun, it is capable of receiving considerable brilliancy of tint. That the fibre may be prepared for thus spinning at a uniform price of from 6*d.* to 8*d.* per lb. That as it may be spun in any proportions with silk, it is evident that the price of the yarns must be reduced according to the relative proportions of the materials employed, thus extending the markets, and giving increased employment to the operatives.

15. That, by M. Claussen's process of bleaching, any useless flax can be converted into a first-rate article for the paper-maker, at a less price than the paper-maker is now paying for white rags; and suitable for the manufacture of first-class papers.

In conclusion, M. Claussen and his friends had no doubt that a plan might be devised by which the grower of flax would derive not only the benefits to be obtained from the sale or consumption of his flax-seed, and the sale of his straw, as stated in the paper read, and the further advantages to be derived by him from the partial

separation of the woody part of the stem from the fibre, which would reduce the cost of transit, and provide for a larger return to the land; but also the larger profit to be derived from the transforming of the straw into fibres suitable for any of the purposes above described, according to the suggestion pointed out in the paper read to the meeting, and thus secure to themselves that double profit, which, under the present system, it was all but impossible for them to obtain.

Sir James Graham inquired whether the farmer, in separating the seed from the straw, would be liable to injure the fibre? To which

M. Claussen replied that no such injury to the fibre would arise from any of the present modes of separating the seed from the straw, so long as the separation was made longitudinally; that an ordinary threshing-machine might be so employed as not to injure the fibre; in fact, that the only injury that could arise would ensue from breaking the fibre across, or steeping it on the old system.

The Chairman thought it desirable that no time should be lost in putting the farmer in possession of all the conditions under which flax could be grown advantageously, and conveyed to market at a profit, as the time for sowing the crop was near at hand.

Mr. Alcock, M.P., stated that coals could be brought from Yorkshire at 7*s.* 6*d.* per ton, but they were a compact heavy article of transit, while flax would be bulky and light.

Mr. McDermott observed that the bulk of the flax might be reduced by partial removal of the straw by a machine that would not cost more than £10, and also by hydraulic pressure, as in the case of hay for exportation, and that probably the railways might eventually contract at lower rates for the conveyance of this new branch of traffic.

Mr. Majendie thought if the machine was portable, it might be let out from farm to farm. If the new process did not produce any injurious effect on flax that rendered it unfit in any degree for subsequent use in all the ordinary stages of manufacture, it would prove of great benefit to the country.

Mr. Christopher, M.P., and Colonel Challoner, thought it desirable that the cost of machinery required by farmers for commencing this branch of cultivation, so new to many of them, should be accurately ascertained.

Mr. Miles, M.P., had been just endeavoring to obtain that information from one of M. Claussen's friends near him, and it appeared that one machine only was essential, but that two might, for further preparation of the flax, be employed, if the farmer thought proper; the first machine would cost £10, and the object of it was partially to separate the fibre, leaving the shoves or gross remaining matter, amounting to two thirds of the original flax, behind, to be returned by the farmer to the land; the second machine would cost £50, and was adapted for clearing the fibres effectually from the refuse after the first chemical process.

The Hon. Dudley Pelham, M.P., conceived it important to inquire into the effect that the introduction of this new system would have on the relative employment of laborers in flax culture and its operations.

Mr. Kennedy inquired the price of new "British cotton" compared with that of the ordinary foreign cotton, and was informed that it was from 4*d.* to 6*d.* per lb.; while the foreign cotton ranged from 8*d.* upwards, according to quality.

Mr. Fisher Hobbs informed the Council of the result attending flax cultivation in the eastern counties, where the growers had been unable to obtain a market for their produce. The farmer's capital was, he thought, too nearly exhausted at the present moment to render it prudent for him to embark in any new line of cultivation, without being first well assured that after having overcome all the practical difficulties of a new crop, and its preparation for sale, he should find a ready market for its disposal. He hoped, as in the case of wool, that there would be a probability of farmers having a flax market, so that the article might be taken off their hands at so much per acre or per ton, without loss or risk of the capital employed. Seeing among them that day a member of the distinguished family of the Leeds flax-spinners, he would appeal to him on this point, in the hope that he would be able, from experience of the whole question, to favor them with an opinon on the subject.

Colonel Challoner then ascertained, by inquiries addressed to M. Claussen, that flax injured by the farmer for sale and use under the old system, was available and equivalent to uninjured flax for the purposes of M. Claussen, who would give as good a price for it.

Mr. Marshall, M.P., replied that his brothers were the flax spinners; he was only, to a limited extent, a grower of flax for their use. They were, he believed, in the habit of paying £7 to £8 per acre for the use of land for the flax crop, they bear-

ing all the expenses of cultivation, while the farmer had the benefit of the land for the remainder of the year. There was at the present time, he believed, a considerable market for flax. In Belgium the "fabricant" relieved the grower of all trouble and responsibility attending his crop, visiting his farm in person and taking it at a valuation. On the present plan, the object was to obtain long fibre; cloth formed of which in the warp with cotton in the weft was stronger than that formed entirely of cotton, and more durable in wear, being employed for sheeting and shirting. On the new principle, the flax, it appeared, was broken up into short fibre; and instead of steeping in hot or cold water, chemical means were employed to facilitate the process without injury to the material. If land was clean and in good order, flax might be grown without manure. But the farmer could not, under the present system of steeping, both grow it and prepare it for the manufacturer. With regard to thick and thin sowing, that question had reference to the object of the cultivator, namely, whether a fine fibre and little seed were required, or a coarser fibre with a full crop of seed. On the banks of the Lys, in Belgium, where the finest flax had been grown for centuries, and used for making the finest lace, they practised thick sowing, three and a half bushels per acre, and obtained about fourteen bushels of seed per acre; but the stems were long and straight, without branches, and the longest fibre was obtained. In Ireland and Russia thin sowing was practised, from two to two and a half bushels per acre, and from sixteen to twenty bushels of seed were obtained; but the stems of flax branched out more, and an inferior fibre was the result. It would be the safest plan for beginners in this country to sow thin, and thus get more linseed and straw. He concluded by remarking, that if M. Claussen succeeded in his laudable endeavors, so much the better would it be for the farmers of this country.

Mr. Macartney thought that the average growth of flax in Ireland had not fallen off. He referred to Lord Clarendon's liberal aid in promoting its cultivation in that part of the United Kingdom, to the mode in which the factors purchased the crops, to the cost of conveyance, and to Schenck's improvement in steeping.

Mr. Hammond had grown flax in Norfolk, but finding no market for his produce he had sent his flax to be manufactured into linen for his own shirts. He had also had several of the cottages on his estate thatched with the straw, and more beautiful thatch he never saw.

Mr. Fuller, M. P., had also grown flax in Sussex, but he had no better success in getting it off his hands; and when he offered it to a large manufacturing house, he was told that they could only give him linen in return for it.

Mr. Shelley remarked, that there was no difficulty in farmers growing flax; the only difficulty was to get a market for it. In Sussex it could not be turned into money. If M. Claussen could make it marketable for them he would find no want of growers. It was, he thought, of little purpose to tell farmers of the quantity grown and the price it ought to fetch.

M. Claussen replied, that it was both simple and easy to prepare the flax for the spindle, and he would undertake to furnish persons properly instructed, who would direct the farmers how to proceed. There was one house at Bradford, that of Messrs. Quitzow, Schlesinger & Co., flax-spinners, dyers and merchants, whose only fear was that enough flax would not be grown for their use; and they were, he believed, ready to give £4 per ton for flax of fair quality.

Professor Way observed, that the present system of preparing flax only applied to existing markets. M. Claussen's method, as he understood it, had the merit of opening new and extensive markets for this article; and there was one important point in the new plan—that there would in future be no distinction of flax into fine or coarse qualities. The farmer, too, under the new system, would not be obliged to pull his flax, as under the system hitherto in use, before it was ripe, in order to secure a higher price for his fibre; but, on the contrary, it would not be necessary to pull it until the seed and stalk were fully ripe. The farmer would thus obtain a larger portion of fibre in proportion to the bulk, and a heavier crop of seed. He understood the quality of fibre in the new process not to be so essentially of importance as under the former plan, and that farmers may break the flax to reduce its bulk. The new material would be intermediate between linen and cotton; less valuable than the one, but more valuable than the other.

Mr. Shelley then rose to propose a vote of thanks to M. Claussen for the favor he had done them in his attendance on the occasion, and the information he had laid before the Council. He heartily wished him success in the practical development of his discovery, and hoped that the farmers would reap the benefit of it, and obtain a fair remuneration for their produce.

Mr. Miles, M. P., seconded the motion. Kind, indeed, it had been of M. Claussen to come before them that day, before he had completely secured his patent, to give them the earliest notification of the agricultural bearing of his researches. He trusted that the result would prove as good for himself as for the farmers whose interests he had then advocated.

The Chairman then put the vote, which was carried unanimously. He was sure they all felt deeply obliged to the Chevalier Claussen for the favor he had done them. The information had been fully submitted to their consideration, but of course they received it without any inference being drawn from such reception that the Council held themselves responsible in any degree for the opinions expressed by M. Claussen. He thought it his duty as their chairman to repeat this caution. On that day fortnight, namely, on Wednesday, the 26th of February, at noon, M. Claussen had consented to again attend, for the purpose of detailing, after the completion of his specifications, the details connected with his new process. Mr. Beale Browne would probably on the same day bring forward the statement, of which he had given notice, of his long experience in the cultivation of flax.

In his *Agricultural Gazette* of the 22d February last, in his "notice to correspondents," Doctor Lindley says:—

British Cotton.—We have received a sample of flax prepared according to M. Claussen's method, from Mr. Christopher, who advertises on the subject in our columns. It appears well adapted for manufacture from cotton machinery.

RAILWAYS IN THE UNITED STATES.

More than thirty years ago, when about to establish a weekly journal, which might be looked to as *one* organ at least, in the Union, devoted to the cause of the plough; the first reflection was, how indispensable to agricultural prosperity is *cheap, and safe, and quick transportation!* The words "Internal Improvement" were accordingly made part of the sub-title of the old "American Farmer."

Under that head, just twenty-six years ago, we published a letter, then considered remarkable, if not precocious and chimerical, from Thomas Gray, the great civil engineer of England, dated the 2d of August, 1824. In that letter, which time and history have rendered interesting and curious, he says, prophetically, as to railroads between London and Edinburgh, (on which cattle are now transported in twenty-four hours from city to city,) "The great saving which *might* be effected by the employment of *steam power*, will be obvious to every one, when it is mentioned, that one steam engine would, on an improved railway, draw from London to Edinburgh *three* stage coaches, (each carrying twice the luggage and number of passengers of ordinary coaches,) in thirty hours, which now require three hundred horses, and at least fifty hours for the performance of the journey!"

United States.—The census of the United States, which, however, is only partially completed, offers this result:—So far as the general nature of the returns can be inferred from the data at hand, the population of the Union will be about 25,000,000. From the year 1800, when the number was a little more than 5,000,000, to 1840, when it had advanced to 17,000,000, the decennial rate of increase was about 33 per cent.; but this rate would have given for 1840 a population of 22,000,000 only; therefore the ratio of increase is greater. Material power has also been developed with population. Great Britain alone excepted, no State in Europe could now maintain equal armaments in the field for any length of time. This marvellous growth is deranging all the old traditions of "balance of power." America is, in fact, not only a first-class State, but, in a few years, if no internal disorder shall

occur, she will be the greatest of all existing countries. Should the 1840–'50 rate of increase be maintained for fifty years, the population will then amount to one hundred and ninety millions—nearly equal to that of the whole of continential Europe. And were it possible to conceive the same ratio maintained for another fifty years, the census of 1950 would give the astounding number of 1,696,000,000!—*Eng. Paper.*

A NEW ENEMY TO THE WHEAT CROP.

EDENTON, N. C., Feb. 7th, 1851.

JOHN S. SKINNER, Esq.:

Dear Sir:—I take the liberty of sending you, both for your examination and the good of my brother farmers, in case you find it a sufficient curiosity to report upon in a future number of your very valuable periodical, a very singular, and in this section of the country, a very novel visitor. In a field of wheat which I sowed from the 25th to the 28th of October, in rather a late white wheat, (the blue stem,) on land which was ploughed early in August, covering a considerable growth of white clover and weeds, and only stirred on the surface with small ploughs when the wheat was sown, an insect, a specimen of which I send you, made its appearance early in December in one portion of the field, and has since gradually spread over one hundred acres, (not quite all the field.) During December we had light rains and very mild pleasant weather till Christmas, when it was cold enough to freeze considerably; we then had also two days of very cold though not heavy rain. In January it was dry and mild till the 29th, when for three days we had it colder than it has been since 1835 or '36. I noticed the thermometer at sunrise on the coldest morning at 12½°; some say it fell to 10°. I mention this to show you that the insect has lived and increased greatly through all kinds of weather, except *very heavy rains.*

It appears on the under-side of the leaf in great numbers, like the cabbage louse in gardens, and draws the substance from the plant, until it withers to the surface of the earth. Large patches of the field now appear almost bare, and if their ravages continue much longer, I fear the whole field will be destroyed, for by keeping the plants so closely nipped, they will not be able to spring; though I do not think they could injure plants three weeks hence, which they might then attack for the first time. I do not know how many days their life lasts, but at one stage of their existence they have wings like an ant, which enable them to fly five or six feet at a time, I believe. I inclose one with wings. I hope I have not written enough to weary you, though I thought it proper to say all that I know of the insect. No one here has ever seen it before, and if it is a new enemy, it is certainly destructive enough to be worth examining into. I shall hope, in your April number, to hear your opinion of it. My name I of course do not care to see in print in connection with it, my only object being to elicit information which may be valuable.

Very respectfully,
T. L. SKINNER.

P. S.—I send but one insect with wings, and he is attached to a leaf with black thread around it. There are others in all stages of life.

As facts like these become, in time, historical of the epochs signalized by the appearance of new enemies to grain crops, it is always best to give, not only all the facts observed, but the name and locality of the narrator. We understood from Senator Pearce of Maryland, a very skilful and observing farmer, that this insect has made its appearance in the wheat fields of Kent county in that State.

In a previous letter Miss Morris had stated that the insect belongs to the family of plant lice, or aphidæ.

GERMANTOWN, March 12th, 1851.

Sir:—I trust you will pardon me for not sooner acknowledging your last favor of Feb. 28th, when I plead illness as my only excuse, and trust that Mr. Skinner's letter to you may be in time to enable you to acknowledge it in the April number of your journal.

Any information in my note to you which you may consider valuable is at your service, and I regret to say I have few remarks to make in addition that would prove advantageous to the cultivator. Had your correspondent known the history of this universal and noxious insect, he would have destroyed at once every plant of wheat on which he saw it in the fall, and thus have prevented its spreading, and I doubt whether there will ever be found any other remedy.

They increase more rapidly than any other of the insect race. It is said on good authority, that they produce three entire generations in forty-eight hours, in favorable seasons; and I know by experience that no cold of *this* climate will *kill* them, and that in our mild winters they increase frightfully.

A copious shower of tobacco tea is often prescribed. This may do when they are so situated as to allow of the tea reaching them, but as they generally hide and feed on the under side of the leaves of plants, and cause the leaves to curl, they secure themselves from such applications that do more injury to the plant than to the lice. They pass through all their different stages of existence in a few days, when they fly from plant to plant, and thus are soon spread over a field or tree. It therefore appears hopeless to propose any other remedy than the death of a small plant, and amputation of an infested branch on a large one; at least I have never succeeded in any other.

It is true, as you say, that Köllar says but little on the subject, but you will find an interesting article in Harris's book on Insects injurious to vegetation, page 186, which may suggest some remarks worthy a place in your valuable periodical.

Very respectfully yours,

M. H. Morris.

J. S. Skinner, Esq., New-York.

Importation of Iron.—Among the articles of American manufacture which suffer under the effects of the tariff of eighteen hundred forty-six, that of iron is prominent. The effect upon some other articles has probably been as great, but that of iron will do us for the present; and in relation to it shall state but one fact taken from the official returns—the importations. From 1822 to 1829, the importations of foreign iron varied per annum but little, and were a trifle over 10,000 tons From that time it increased slowly until 1840, when it reached 60,000 tons. 1842 it went down to 50,000 tons, but in 1846 went up again to 60,000 tons. Then was passed the British tariff, but owing to the high prices in England the imports of iron into this country did not increase for two years, but prices abroad then falling, in 1848 the imports went up to 80,000, and 1849 to 173,000 tons.

The consolation suggested to the farmer by the free-trade advocate is, that he gets his iron cheaper, while his own good sense should tell him, that the men who in this country ought to be employed in making these 173,000 tons of iron, consuming, while so employed, their pay in beef and mutton and potatoes of the American farmer, being now driven from their employment as manufacturers, must go to the West, and there help to add to the surplus of all sorts of agricultural produce; and finally, when all our iron works and furnaces are blown out and destroyed, John Bull will give us what he pleases for our produce, and charge us what he pleases for iron; for what American will be fool enough to risk his capital under a commercial policy in which there is no stability?

But if, on the contrary, we would put our foot down, and say, He who manufactures for us any thing for which we have or can produce the materials, must come and do it here, millions would come to our country to embark in every industrial pursuit. The great bulk of the farmer's produce would find a market at home. Ours would be the commanding market, and foreigners would come for our surpluses, asking—what will you take for what you have to sell, and what will you give for what you have to buy?—instead of our going to them, begging them to buy and asking them to sell. When does the grain-seller get most for his corn, in

a dry season, when crops are short, and his neighbors come to his granary, and ask, What's your price for corn; or when he has to take his corn to a storekeeper to know what he will give?

REPEAL OF THE TARIFF OF 1846 ON AGRICULTURAL PRODUCTS IN FAVOR OF CANADA.

ANOTHER session of Congress has closed without the passage of the bill for the prostration of the agricultural interests of the Union, commonly known as *the Reciprocity Bill*, the object of which was that of admitting the products of Canada duty free, while the duties on those of our products that Canada required to purchase, as tobacco, cotton, &c. &c., are continued. The bait held out to induce this sacrifice of the most important interests of the country was the free navigation of the St. Lawrence, ours by right, and for which we have already paid thrice its value in the grant to the Canadians of permission to use our canals, railroads, and rivers, on their road to market. Of little value originally, that river is becoming daily less and less important, as with the increase of roads the cost of toll and transportation diminishes.

"We have now before us," says the *Washington Republic*, "the new tariff of tolls on the New-York canals, by which we see that the rates of the present year will be about one fourth less than those of last year, the necessary consequence of which must be a great diminution in the proportion of the trade of Canada and the Western States that will seek the outlet of the St. Lawrence, and a diminution in the value of that river as a channel of trade. Such being the case, it will be a nice question to determine how the Reciprocity Bill should be altered to suit this new state of things. Last year Canada claimed that, in consideration of granting us the use of the river, for which we had already largely paid, she should be freed from the payment of duties on all she needed *to sell*, while retaining the duties on all she needed *to buy*. It was a one-sided bargain, certainly; yet there were members of Congress who advocated it.* Now, however, that the value of the river is diminished at least one half, we presume they will be disposed to agree with us that it would be necessary to revise the terms.

"It is threatened that Canada will retaliate, for our failure to pass this bill, by closing the Welland canal to our trade, and by doing many other things; but we fear that that canal runs some risk of being closed to all the world, by the abstraction of all its business, as our canals and railroads come further into operation. It is, even now, our trade that supports it. The total American tonnage that passed *through* it last year

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* And Mr. Holcomb, of Delaware, says that, as a question to be discussed by the Maryland State Agricultural Society, with a view to remonstrance with Congress against the passage of any such law, it was held to be too much of a political question to be entertained by the Society. So that the farmers of the United States were saved from this so-called reciprocity "rather by a God-send, than by any sagacity or resolution of their own." What said Hercules to the waggoner who prayed assistance to get his waggon out of the mire? We are sometimes tempted to wish that all other organizations of party could be abated, and the whole country resolve itself, *as it is doing*, into the *friends* and *opposers* of *domestic industry*—to the working up of our own materials, and the protection of *American* interests, against the ceaseless, all-pervading "policy of British merchants," as it was aptly denominated by General Jackson.—*Ed. P. L. & A.*

was 302,227 tons, while the Canadian that passed *on, or through*, was but 281,873, and yet they threaten to close it, and thus lose more than half the tolls. The closing of the shop against the shopkeeper's customers would be an original idea. That of the abandonment of the old and high-priced shop by the customers, in favor of the newer and cheaper shopkeeper, is an old one that has often been acted upon; and we are much disposed to think it will be so in the present instance. It is time that our worthy friend *Bull* should be taught that we are neither to be seduced nor threatened into the purchase of his wooden nutmeg, becoming daily more and more wooden."

A PREMIUM OFFERED.

A copy of the JOURNAL OF AGRICULTURE, 3 vols., of more than 600 pages each, beautifully illustrated, with colored prints and well executed steel engravings, will be given by the editor to any one who shall present, to the next meeting of a State Agricultural Society, the most exact and detailed account of the outlay and income of a Farm or Plantation. The object is to show, by an actual exhibit, or by a form which shall be deemed satisfactory, the net income of the year's operations—such as every well-bred Merchant can exhibit when he balances his books at the end of the year. The Committee of three to award this premium, to be appointed by the President of the State Society, and ought to be Merchant Farmers—who could say, on a view of the statement, whether it embraces a full account of all that should be brought into the reckoning. Any improvement to this offer, which may be suggested by Mr. DELAFIELD, President of the New-York State Agricultural Society—himself a first rate Merchant Farmer, and capable of appreciating the object of this offer—will be adopted. The purpose is to get young Farmers *in the habit of thinking*, so that they may be able to tell whether farming is likely to prove for them a *cornucopia*, or whether they are likely to come out at the *little end of the horn!*

HOW THE PLOUGH GOES.

NEW subscribers to the *Plough, the Loom, and the Anvil*, from 1st January to 15th of March, number over two hundred and fifty; but it is flattering to the character of the work, at the same time that it proves its national spirit and objects, that it should *spread over so wide a portion of the country*. These subscribers come from Mississippi—New Jersey—Virginia—New-York—Alabama—Louisiana—Georgia—Delaware—Indiana—Pennsylvania—North Carolina—Massachusetts—Tennessee—Kentucky—Maryland—Maine—District of Columbia—Ohio—Ilinois—Florida—South Carolina—Missouri—Connecticut—23 different States.

☞ While our Agent at Charleston forbids us to send him any more, a gentleman of Louisiana, whose letter may be seen, writes under date of March 1st, 1851 :—

You may place me upon the list of the one hundred, (I hope it may be ten thousand,) who will pay you ten dollars [for five copies] to aid you in your glorious enterprise. The *Plough, the Loom, and the Anvil* ought to be read by every free-born son of America. If the people of the South would read it and practise its precepts, they might soon be the most independent people on the earth.

THE papers of the day will have informed the readers of this journal of the sudden and unlooked-for death of its Editor, almost at the moment when this number was ready for publication. The following notice of this melancholy event is taken from the *National Intelligencer*, and the high character therein given will certainly be vouched for by all who knew the subject of it. The Agricultural interest of the Union has lost in Mr. SKINNER a friend that will not speedily be replaced.

OBITUARY.

In the lamentable death of JOHN S. SKINNER, announced in our last by a note from our Baltimore correspondent, whilst we have lost a friend of long standing and always highly esteemed, the country at large has also sustained a loss which will not be soon or easily repaired. Though his whole life had been marked by a jealous interest in the welfare, not of the Commonwealth only, but of every class of which it is composed, he was never more usefully engaged, or with better prospects of success, than at the moment of his death. We refer of course to his arduous undertaking and most valuable Agricultural and Industrial enterprise, the periodical to which he has for several years devoted himself with an intelligence and industry which had at last established it as a permanent publication, during his lifetime at least.

We subjoin a notice of the life and character of Mr. SKINNER, from the pen of one who knew him well, and is qualified to speak of him from that knowledge. To the testimony of such a contemporary, it is due from us to add, that we had personally known Mr. SKINNER intimately, in prosperity and in adversity, and in every relation of life, and are able to bear testimony to his integrity, his honor, his kindness of heart, his attachment to his friends, and his devotion to his family; in which relations, composing as a whole his character, we only express our conscientious belief when we say, that in all these essentials he was entitled to a place in the first rank of humanity.

FROM THE BALTIMORE "CLIPPER" OF MARCH 22.

We announce with deep sorrow the sudden and painful death of JOHN S. SKINNER, Esq., the well-known Editor of the *Plough, the Loom, and the Anvil.*

Between two and three o'clock yesterday afternoon, he entered the Baltimore Post-office to transact some business, and on leaving stepped toward the side door on North street, but unfortunately mistook for it the door which leads to the basement, and, opening it hurriedly, made one step and plunged head foremost down the flight of steps to the bottom, making, in the fall, a complete somerset. The clerks and carriers (one of whom saw him open the wrong door, but had not time to warn him of the mistake before he fell) immediately ran to his assistance, and found him speechless! As soon as possible they took him up and carried him into the Postmaster's room, placed him on a comfortable cot, and called in a number of physicians, among whom were Drs. Buckler, Riley, and McKenzie, who did every thing that the best medical science could suggest; but his skull was found to be badly fractured at the base, and his injuries of such a character as to leave no hope of his surviving. He remained totally insensible until twenty-five minutes past seven o'clock last evening, when he ceased to breathe. His afflicted wife was present soon after the accident occurred, as were also ex-Mayor Davies and other relatives, whose grief at the sudden bereavement may well be imagined.

Mr. SKINNER was no ordinary man. He was known throughout the whole Union for his talents, untiring industry, and strict integrity. For twenty years he was the able Postmaster in this city, having been commissioned by President Madison, and continued until nearly the close of General Jackson's second term.* It is a singular coincidence that he should have met his death in the office the affairs of which he so ably managed for many years, but from which he was removed more than fifteen years ago.

General Harrison coming into the Presidency, he was appointed Assistant Postmaster General, the duties of which he ably discharged until removed by another Administration; since which he has been engaged in editing and conducting *The Plough, the Loom, and the Anvil*, an agricultural journal of the highest character. His death will be a severe loss to the agriculturists throughout the country, as he was an able and zealous advocate of their every interest.

In this city, where he was universally known and highly esteemed for his social qualities, unassuming demeanor, and generous impulses, the news of the accident which befell him, and the subsequent announcement of his death, created the most profound sorrow.

* Mr. S. was removed from office by President Van Buren—not by General Jackson.

AGRICULTURAL ADVERTISER.

OPPORTUNITIES such as the one here offered so rarely occur, that all who desire a dip of the best blood of "Short-horns" to be had in any country, will do well to be in attendance personally, or by agent.—ED. P., L., AND A.

GREAT SALE

OF SUPERIOR

THOROUGH-BRED SHORT-HORN CATTLE.

THE SUBSCRIBER,

HAVING MORE STOCK THAN HE CAN WELL SUSTAIN ON HIS FARM,

WILL OFFER AT

PUBLIC AUCTION

About Thirty Head of his Improved Short-horn Cattle,

CONSISTING OF

BULLS, COWS, HEIFERS,

AND HEIFER AND BULL CALVES,

ON THE

26TH DAY OF JUNE NEXT,

At his Farm, two and a half miles from this City,

(TROY, N. Y.)

It is known to breeders of improved stock in this country and in Canada, that the proprietor of this herd during the past twelve years has, through the medium of importations from England, and selections from the best herds in this country, spared no expense to rear a herd of cattle from which superior animals could be safely drawn for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq., of Kirklevington, Yorkshire, England; which herd, it is well known, has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement.

The announcement of that sale created great interest, and all Short-horn breeders in England seemed emulous to secure one or more of these animals to mingle with the blood of their own herds; and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering, as was said, four to five thousand persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included the imported Bull, Duke of Wellington, and the premium Bull, Meteor; these are Bates's Bulls, and their reputation as stock getters is too well known to need any comment. I am, however, authorized by Lewis F. Allen, Esq., of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, to say, "that in no instance, to his knowledge, had these two Bulls been placed to short-horn cows of other herds previously imported into the United States, but what the produce was superior, in general qualities, to such herds."

The most of the stock which is now offered for sale have been bred from these two Bulls, and the proprietor having a young Bull, more remotely connected with that portion of the herd he retains, (being about fourteen in number,) can spare these two valuable Bulls. There will be in the stock offered for sale six young Bulls from about eight months to two years old in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities,) Heifers and Heifer Calves. It is believed that no herd of Short-horns has ever been offered for sale in this country exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals.

A Catalogue containing the pedigrees of these animals will be ready for delivery at an early period, in which the terms of the sale will be particularly stated. A credit will be given from six to eighteen months.

Gentlemen are invited to call and examine the herd at their convenience.

GEORGE VAIL.

Troy, N. Y., February 15th, 1851.

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VON THAER'S great work on Agriculture. THE PRINCIPLES OF AGRICULTURE, by Von Thaer, in one volume, 8vo., 550 pages, for only $1.50 in paper covers, or $2 bound in muslin. It is the best single volume on Agriculture we have ever seen.

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The Editor pledges himself for the great value and unparalleled cheapness of all these, works—all of which should be in the library of every gentleman in the country.

Any of the above can be sent by mail.

☞ Will our patrons be good enough to let their friends know, that if they wish to subscribe to "The Plough, the Loom, and the Anvil," they can commence at *any time*, and that a five dollar note will pay for *two* for one year, or ten dollars will pay for five.

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Stock Cattle of all the different breeds, Sheep, Swine, Poultry, &c., purchased to order, and carefully shipped to any part of the United States, for which a reasonable commission will be charged.

All letters, post paid, will be promptly attended to.

Address **AARON CLEMENT,**

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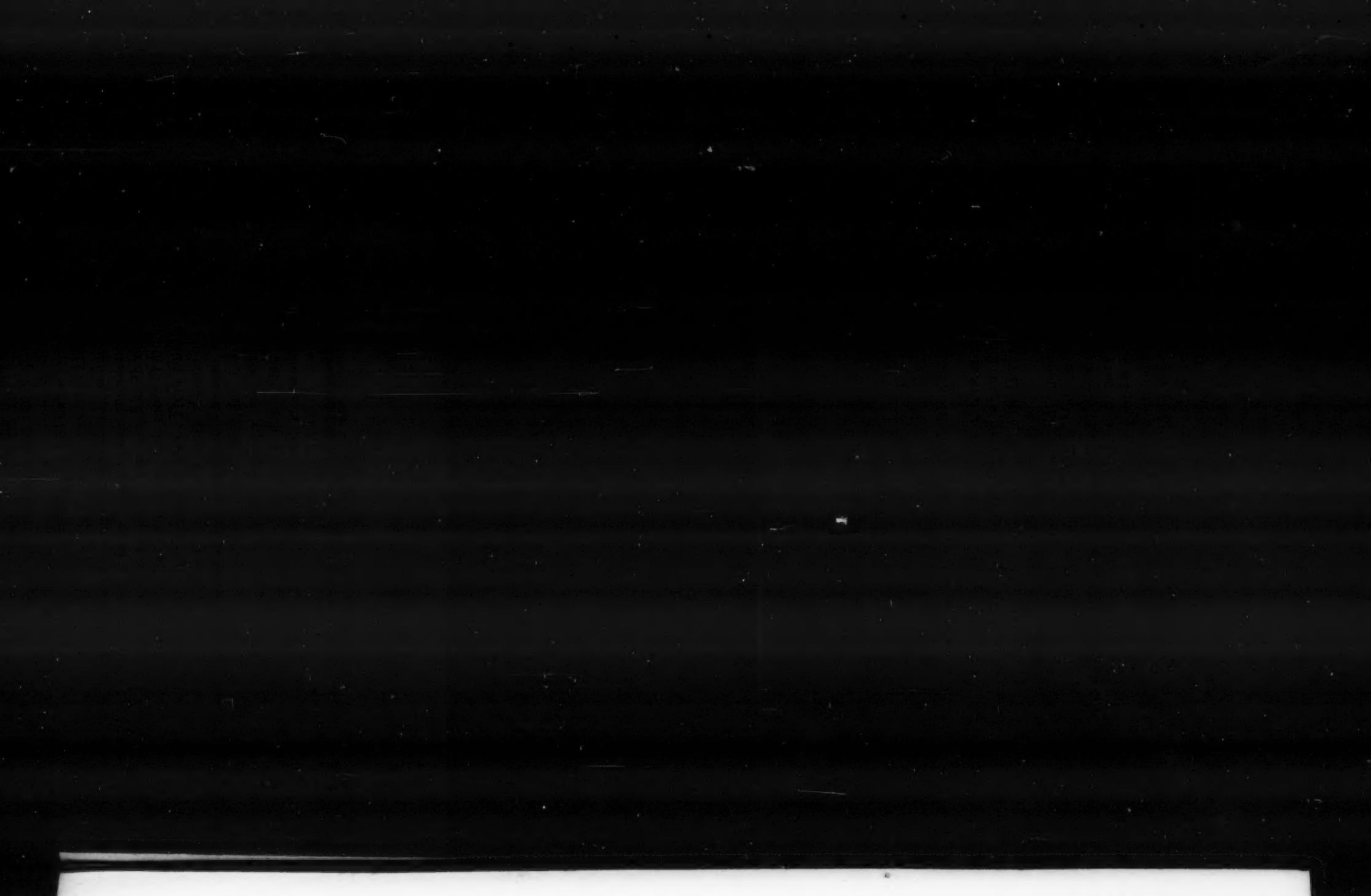
THOROUGH Bred Durham Cattle and Grades,
Do. do. Alderney do. do.
Do. do. Ayreshires,
Do. do. South Down Sheep,
Do. do. Oxfordshire do.
Poultry of the various breeds,
Swine do. do. by

AARON CLEMENT,
Agent for the Purchase and sale of Improved Stock.

Philadelphia, January, 1851.



DOMESTIC ANIMALS AT AUCTION.

THE POSTPONED YEARLY SALE OF

FULL-BRED SHORT-HORNS,

AND

IMPROVED DAIRY STOCK,

Consisting of about FIFTY HEAD, will come off at my FARM,

ON

TUESDAY, JUNE 24th, 1851,

AT 12 O'CLOCK, M.

I shall dispose of all the improved Dairy Stock, which is composed of the finest Short-horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which composed the improved Short-horns.

I am now breeding the Short-horns, Devons and Ayrshires, each separately and pure, which, owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own County Society, (with the exception of last year, when I was not a competitor at either,) it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Dairy Stock. Several of the Bulls got by Lamartine will be of the most appropriate age for efficient service the coming season. All Cows and Heifers old enough, will be warranted in calf at the day of sale, by my Imported Bull "Lord Eryholme," or my celebrated Bull "Lamartine."

I own two thorough bred Devon Bulls; one the celebrated old Major, the other, one and a half years old, imported by me from Devonshire. One of the above animals will be sold—which, I have not as yet determined.

A full Catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day.

I also have about 20 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to my imported Buck "Babraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain Stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this: in case they prove not to be so, it shall be optional with the purchaser, on his *certificate of that fact*, either to receive from me $25, (say twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give $25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm, at two weeks old.

Stock purchased to be sent a distance, will be delivered on shipboard or railroad in the city of New-York, free of risk or expense to the purchaser.

Persons living at the South, in a climate to which it would not be well that stock should be transported, at that hot season of the year, may let such animals as they may purchase remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing them throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivator of the soil, and to benefit the consuming country at large.

All communications through the Post please pre-pay, and I will pre-pay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next. Persons wishing to view the stock at any time will find my superintendent, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851, at Mount Fordham, Westchester County, eight miles from the City of New-York, by Harlem Railroad.

April 1.—3t. L. G. MORRIS.

FROM MEMBERS OF CONGRESS

WHO

SPEAK "BY THE BOOK."

As a zealous and able Advocate of the Industrial Interests of the country, the undersigned cordially recommend

"THE PLOUGH, THE LOOM, AND THE ANVIL,"

PUBLISHED BY

JOHN S. SKINNER,

to the patronage of all who desire to see American Industry fairly protected in the development of our own resources, and the working up of our own materials. It eminently deserves their encouragement, as the first systematic attempt to *combine* the true political economy with *practical instruction* in the art of Agriculture; demonstrating to American Planters and Farmers, how essential to their prosperity is the policy which tends to diminish the distance, and all the expenses of exchange between the consumer and the producer.

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